The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME L. CHICAGO, ILLINOIS, JANUARY 25, 1908. NUMBER 4.

Original Articles

THE FACTORS WHICH INFLUENCE THE PERMANENCE OF CURE IN OPERATIONS FOR CANCER OF THE BREAST.*

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Cancer of the breast is the commonest form of malignant disease met in practice. It still remains the scourge of womankind, and unlike its twin devastator, tuberculosis, it can be early recognized and, by radical surgery, can be absolutely stamped out. It is not an inaccessible disease. It commits its ravages by daylight. It challenges the attacks of the surgeon and has mocked his tardy efforts for ages.

This disease has had lavished on it a stupendous amount of technical skill in the unravelling of its pathology and has had brought to bear on it the greatest thought of the surgical world. The one thing needful at the present time is a keener appreciation on the part of the profession of the necessity for early recognition, and this in turn depends on the realization and conviction that 90 per cent. of all lumps in the breasts of women past the age of 30 are, or will become, cancer. Thirteen out of fourteen tumors in the breasts in women beyond 40 years are malignant.

Unfortunately, cancer is on the increase. It is getting to be more common in the young and in races formerly immune. There are four times as many deaths from cancer in England as occurred fifty years ago. Leaf considers that the four antecedents that predispose to cancer of the breast are: 1, Errors of lactation; 2, family history of tumors of the breast; 3, injury (history of trauma in over one-third); 4, worry and anxiety. It is perhaps a combination of all these causes, with or without mastitis, that gives such a large number of tumors of malignant tendency in this gland. The male breast is affected with cancer once to every 177 cases in woman and 60 per cent. of the male cases are traumatic. In women only 6 per cent. involve both breasts. I have, however, removed the sister breast ten years after the first amputation.

While we do not know the cause of cancer, and may never know until the cause of cell growth and life itself is made manifest, we now know its mode of extension by the lymphatics and this offers the key to the operative treatment. We must not only remove the visible diseased tissue, but the glands and adjacent tissues which harbor the lurking and invisible cancer cells. Improvement in results depends on early diagnosis. Cancer itself is at first local and quite curable. It only becomes incurable when its unfortunate victim harbors the disease and conceals it like the Spartan youth who hugged the stolen fox to his breast without a murmur, though it gnawed at his vitals. Delay is the factor which really renders the disease incurable. It is in the promptitude of detection that deliverance lies and the chance of cure diminishes with every day of delay. In every woman who dies from cancer of the breast there was a time in its beginning when it was absolutely curable.

Technical improvements seem to have reached their limit. In the pre-antiseptic period Billroth only removed the tumor itself and left the gland. This yielded only 7.4 per cent. of permanent cures. These early experiences have begotten a deep-rooted belief in the mind of the laity and even of some members of our profession that cancer is well-nigh a hopeless malady. Moore and Mitchell of Liverpool developed the removal of the axillary lymph nodes in 1867-77, respectively. Volkmann and Kuster next added the removal of the fascia from the pectoral muscles in 1882-1883. Then Gross and Heidenhain in 1889 advised and practiced the removal of the pectoral muscles themselves. Finally, Halstead in 1894 adopted all of these practices and took the final steps in the perfection of our present-day technic in practicing the wider extirpation of the skin and taught us the wisdom of extensive operations.

In spite of these improvements, however, Pilcher laments the fact that "on the whole one is almost driven to the conclusion that a surgeon never sees cancer of the breast in any other form except the advanced stages." This can not be said of a general practitioner, because to him many of these patients first make their complaint. The most important factor, therefore, in the permanence of cure in this dreaded affliction is the length of time which the tumor has been in existence. This may be divided into three periods: 1. The time which elapses before the patient discovers the tumor. 2. The time elapsing after the discovery of the tumor before the first consultation is had. 3. The time elapsing after the physician has seen the tumor. The first period is of unknown duration. Then comes the known period of its existence after she discovers it in which she delays seeing the physician. And then, again, there is the known period in which the doctor delays advising the removal of the tumor.

In the cases, therefore, that show marked evidence of delay, one-half are due to the ignorance of the patient and the other half, I regretfully record, are through the counsel of the physician who examines the patient at the period when there is a tumor and perhaps without glandular involvement and advises delay. It should be our first duty to utilize all opportunities to instruct our patients that a large percentage of all cancers can be cured by operation in the beginning and by no other way! It is a fatal mistake to keep a woman under observation for months with salves and applications until the real situation is forced on us. The golden oppor-

* Read before the Tennessee State Medical Association.

tunity for early and complete removal is past and the prospect for cure, even with the most skilled surgery, is very slight. It would be ridiculously stupid if it were not pathetically tragic when we are guilty of waiting for the very complications to confirm our suspicions, which, when they do occur, make us realize that the case is hopeless.

Exploratory abdominal section has had a wide field of employment. It is much more necessary to make an exploratory incision into a suspicious breast than into the abdomen, and it should be resorted to in all cases. If we could wage as vigorous a crusade against cancer as has been successfully waged against appendiceal affections, it would add many precious years to the span of human life.

As long as 80 or 90 per cent. of lumps in the breast are or will become malignant, they are much more serious than any intra-abdominal complaint, and should be examined with the same zeal that has characterized our efforts in unravelling the pathology and cause of disability in the abdomen. As Rodman says, it is more important to make an early diagnosis in cancer of the breast than it is in appendicitis. Some of these patients may and do get well without operation, whereas neglected operations in breast cancer leads inevitably to the most loathsome and horrible of deaths. Women with lumps in their breasts do not understand their danger. They are afraid of operation on account of ignorance of its safety and the great probability of permanent cure in the early stages because of an unfavorable result in some friend who was probably operated on in an advanced stage.

But worse, she may be ill advised by the ultra-conservative physician or surgeon, who, although honest, is not keenly alive to the burning fact that the mammary lumps are nearly always malignant, or will become so if left alone, and gives the fatal advice to "come back in the fall," or "not to bother it until it bothers you." How can we ignore the advice of that ripe surgeon, Maurice Richardson, who tells us that "all neoplasms wherever situated should be removed if possible as soon as discovered." Rodman says: "He who advises a woman with tumor of the breast to wait is guilty of an unwarranted and censurable act."

Yet there is nothing more simple than the microscopic examination of a lump in the breast. The tumor if small and undetermined, can be easily removed through a slight incision, and if large, a portion can be removed and sent to the pathologist for examination. The resulting wound can be left open with two or three provisional sutures and packed with gauze saturated in Harrington's solution or with alcohol to prevent any of the cancer cells from wandering into the blood vessels and setting up metastasis. A better plan, and the one which I am following at the present time in all suspicious tumors, is to have a freezing microtome and a pathologist in attendance on these operations. A small piece of the tumor is removed and frozen, sectioned, instantly examined and a report is returned in from three to ten minutes. If malignant a radical operation can be proceeded with at once, and if not the tumor can be removed with ease and rapidity to the relief of the patient and the satisfaction of the surgeon.

I do not know of a more happy conclusion than to find that a suspected tumor turns out to be innocent. I regret to say that this is the exception and not the rule in cases where clinical evidence points to malignancy. I should, therefore, most earnestly urge that when in doubt the tumor should be removed with its capsule or adjoining tissue, no matter if it is no larger than a hazelnut. If all tumors of that size were so treated and radical operations performed in the malignant ones, the permanence of cure would be above 90 per cent. I believe this would save more lives than any prophylactic measure that is practiced at the present time.

Unfortunately, when these patients first present themselves we have a nodule that can not be moved about in the gland, there is a retraction of the nipple from infiltration of the subareolar lymphatic vessels that points so unerringly to scirrhus and there is little doubt about the diagnosis, especially when there is involvement of the lymph glands in the axilla. Retraction of the nipple and elevation above the horizontal line through the nipple of the opposite breast is pathognomonic of scirrhus. Adenocarcinoma does not produce this elevation of one nipple above its twin. All of the diagnostic signs of cancer that we learned as students are really its complications. We must relearn the importance of suspecting, and microscopically proving the diagnosis in tumors of the breast no larger than peas.

External cancer does not kill locally, but always through metastasis and almost universally by the lymph streams. It therefore may be stated as a surgical axiom that has been proved repeatedly that cancer is entirely a curable disease when situated in an organ or tissue which of itself is removable without causing death; provided it has not extended beyond its immediate or primary lymph efferents, which are also completely removable. It is now generally recognized that in young subjects cancer is particularly pitiless on account of the active and succulent lymphatic dissemination. This is very much more rapid in the young, just as all other infections are. The younger the patient, therefore, the worse the prognosis. In elderly persons where there is a general atrophy of the lymph system and changes in all the vessels, dissemination is more slow. Cancer will remain local a longer period of time. The older the patient, therefore, the better the prognosis.

In the breast there are six routes of lymphatic distribution. The first and most common is in the axillary region. Second, in the neck, extension occurring over the clavicle and also under it. Third, the anterior thoracic glands through the lymphatics that return with the intercostal vessels. Fourth, the posterior thoracic glands involved by the lymphatics of the internal intercostal muscle. This extension is almost inevitable when the gland is fixed to the chest wall. Fifth, across to the other breast. Sixth, down the epigastric fascia into the abdomen.

Sampson Handley[1] of London claims that the lymphatics are the routes of extension of this dreaded disease rather than the blood, as formerly taught. He found that in 12 per cent. of autopsies the abdominal cavity was the seat of metastatic deposits, while the thorax was free. This is explainable on the ground that this takes place by way of the minute lymphatics that travel under the deep fascia to the epigastric fascia which leads to the peritoneum and allows the cancer cells to be showered into the abdominal cavity. He advises removal of this fascia in addition to the Halstead operation.

While urging the importance of early diagnosis, we must recognize our utter hopelessness in the face of delay and advanced disease. While in delayed cases operation nearly always prolongs life, if we declined those

1. Hunterian Lecture, 1905.

late and unfavorable cases more good would accrue to the community than by performing partial operations which must of necessity be disappointing. It is this fact which has made the laity so prone to avoid operation. If we would plainly tell these late patients that operation is hopeless, their neighbors and relatives profiting by that sad experience, would seek relief earlier, whereas, in our well-intended but futile efforts in the bad cases, the necessarily melancholy results discourage those who otherwise would be operated on in a curable period.

The contraindications to operation may be enumerated as: 1, Fixation to the chest wall; 2, extensive axillary involvement where all the structures are fused; 3, enlargement of the supraclavicular glands which are secondary groups; 4, the pigskin edematous lymphatics over the breast signifying that all the routes of lymph return are blocked; 5, multiple shot-like nodes in the skin commonly seen after osteopathic treatment, which bruises the vessels and spreads the cells over the chest with the formation of infected nodes; 6, suppuration of the cancer itself. The only operative fatality in my series occurred in a case of this character; 7, cachexia, the sad death mask of constitutional dyscrasia.

Some years ago we had sanguine hopes of the efficacy of the wonderful *x*-ray. It has proved almost totally disappointing in the management of malignant disease. While it can not cure cancer, except the most superficial forms of epithelioma, it will produce a higher type of local resistance. It will contract the lymphatics and deposit fibrous tissue in and about the glands which delays progress.

It is on the same principle that Dawbarn ligates the arterial supply to starve and thus delay malignancy. The *x*-ray should be employed after operation, especially in the advanced cases. With this agent I now have a series of patients living, after five years, without recurrence of the disease. I am quite sure my percentage of cures has been augmented by this agent, although, to be sure, as one's experience increases the selection of cases and the technical perfection of the operation must not be denied its quota of usefulness.

Early operations on patients in whom the disease is discovered in middle and advanced life are favorable. At operation if the glands are involved only in the outer axillary region the case is still favorable. The nearer the growth approaches the clavicle the more unfavorable becomes the prognosis. If the glands have extended under the clavicle the prognosis is extremely unfavorable. Rodman believes, however, that operation in the first year should yield a permanent cure in 75 per cent. of cases.

Halstead has reported 50 per cent. of permanent cures, and Cheyne in his private practice reported 17 out of 34 cases who were living and free from recurrence from six to seventeen years afterward. Childe quotes a report of 46 cases with 17, or 36.9 per cent., who remained well from five to twenty years. Formerly we fixed an arbitrary limit of cure at three years. Gross after an extensive investigation found that only 2.3 per cent. recurred after three years. We then increased it to five years and now the surgeons say that ten or more years are demanded of freedom from recurrence before a cure can be said to be permanent. Practically, however, at the cancer age most patients who can be given a ten-year immunity will die of so-called natural causes before the disease returns.

As knowledge becomes more general as to what has been and can be done by surgery for the cure of this malady less hesitancy will be displayed by its victims and they will avail themselves of the only help that can be offered. The local disease can be removed with cure if there is no metastasis, but a single remote metastasis will discount the beneficence of the most skilled surgery. The surgery of the past in cancer of the breast was incomplete operation for advanced disease; of the present, complete operation for advanced but still operable cases. The surgery of the future is complete operation in early and therefore curable cases.

TECHNIC.

Without going into the detailed description of the operation the essential steps may be summarized as follows: The most convenient position for the patient's arm is to be tied upright to an Edebohl's stirrup. This gets the hand out of the way and dispenses with another assistant and puts the arm in an easy position for dissection of the axilla.

A modification of the Jackson incision gives the best access to the axilla and allows the maximum of the skin covering available to be utilized. The incision should be shelving to undermine the flaps and not leave any nodules of the gland encircling the tumors; at least two inches should be allowed from the margin of the growth.

Kocher's idea of doing the axilla first has many advantages. It is the most important and difficult part of the work and should be done while the surgeon is fresh. It secures all the blood vessels in the beginning, whereas if the operation is planned from the center toward the axilla one will of necessity cut the same vessels over and over again. The mammary gland should be the last thing to be removed, and it will thus serve the useful purpose of keeping the breast covered and avoid chilling the chest during the tedious dissection of the axilla. In severing the greater pectoral muscle the clavicular portion may be saved because it covers the vessel line and has a separate nerve supply and does not interfere with the removal of the gland-bearing fascia which is the essential feature of the operation.

The pectoralis minor muscle should be removed with the tumor mass and the fascia harboring its glands. It will thus be seen that from the apex of the axilla to the last remnant of the chest attachment the mass should be removed in one unbroken piece. The neck should not be gone into as a routine unless the growth is in the axilla which has almost been the *bete noir* of the surgeon.

I can not lay too much emphasis on the ease of the dry dissection by gauze mops covering the index finger aided by occasional snipping and spreading of the tissue with the probe-pointed Mayo's dissecting scissor.

In addition to the axillary drainage which is made through a separate puncture and conducted by the split rubber drainage tube containing gauze, an additional puncture should be made over the angle of the ribs for another cigarette wick drain, as it is otherwise impossible to drain this area adequately.

In conclusion I should like to call attention to the approximation and tension sutures employed by the Mayos, which consists in taking a wide bite of one flap, then allowing the needle to perforate only the edge of the opposite flap and of the corresponding margin and then widely on the opposite flap in a figure of eight shape and tied over all. This makes a double suture, which accurately approximates the margin of the incision and also acts as a tension suture.

The mortality of twenty-one surgeons in 600 cases is nine-tenths of 1 per cent. It will thus be seen that this operation has less morbidity than perhaps any operation of equal extent that has made surgery so beneficent to the human race.

THE APPEARANCE OF GLYCURONIC ACID IN CERTAIN CONDITIONS OF DIMINISHED OXIDATION.*

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Considerable scientific interest has recently been aroused with reference to the origin and importance of glycuronic acid or its conjugate salts in carbohydrate metabolism, and especially in diabetes mellitus. Paul Mayer, in a series of papers, advanced the view that since glycuronic acid represents the first step in the progressive oxidation of dextrose into CO_2 and H_2O, this compound would necessarily appear as an incompletely oxidized product of dextrose combustion when, as in the incipient stages of diabetes, the body was beginning to lose its power to oxidize the carbohydrates. In substantiation of this Mayer[1] presented the results of the study of some cases of so-called incipient diabetes and of dyspnea in which he detected the elimination of glycuronates in quantities far in excess of the normal. So far as I am aware, no further notice of this point has been taken clinically, although, theoretically considered, the presence of this compound in the urine would be an invaluable aid in indicating early stages of diabetes.

This short communication deals with the search for glycuronates in the urine of patients exhibiting glycosuria of diabetic or other origin and of those who had undergone operations in which ether or chloroform had been employed. It is well known that under conditions of anesthesia the organism finds itself in a state of diminished oxidation and also that at such times, more especially after the use of chloroform, the urine voided after operation not infrequently shows a positive (?) reaction to Fehling's test. With these points in mind, it seemed advisable to conduct a second series of tests on urine eliminated under these various conditions and to attempt to decide to what could be attributed the reducing power noticed.

Methods.—In the first series of tests the glycosuric urines were examined quantitatively as follows: By means of Fehling's and Gerrard's titration methods, by Lohnstein's newest model of saccharometer and by polarization before and after fermentation.

In the second series of determinations qualitative examination was made before and after yeast fermentation, using Fehling's, Nylander's, phenylhydrazin, orcin and polarization tests. In this way it was expected that the appearance of any substance other than dextrose could be detected. In connection with the postoperative urines a portion voided within twenty-four hours preceding the operation was examined as a control in the same manner as the postoperative sample. The anesthetics were given in the usual way, with the exception that when chloroform was employed oxygen was administered in a more or less uniform ratio to the anesthetic, this ratio depending on the character of the operation. On the average the administration amounted to fifteen minims of chloroform and three to four liters of oxygen per minute.

Before the results are discussed it becomes essential to call attention to some points as regards the manner in which the various tests were performed. No qualitative copper test for dextrose in the urine is so widely employed as Fehling's, while, at the same time, none is so carelessly performed. As a result, ambiguous findings are constantly obtained and errors in diagnosis frequently occur. The main purpose in view, when the test is applied to the urine, is to detect the presence of dextrose as against other reducing bodies, i. e., uric acid, creatinin, pentoses, lactose, etc. Since grape sugar is capable of reducing copper much more readily than any of the other compounds which might simulate it, the most suitable conditions for the test are as follows: First, the copper should exist in its most active or ironized condition; second, the quantity of the other reducing substances in the urine must become reduced to such a minimum that they are powerless to transform the copper while the amounts of dextrose still present remain active; third, the mixture should never be boiled after the addition of the urine. The first two conditions are met when the Fehling's solution is diluted and the urine added in much smaller quantities than is usually suggested in the various text-books on urinary analysis. The third is easily accomplished, although sufficient importance is not usually attached to it.

The disadvantages of using large amounts of urine (an equal or even one-half volume of the Fehling solution) are twofold. In the first place, the strongly alkaline copper solution, especially in urines of high specific gravity, throws down a more or less voluminous precipitate of cupric phosphate which takes out the blue color of the solution and changes it to a dirty dark green. In the second place, the alkaline solution, acting on the ammonium salts of the urine, liberates sufficient ammonia to hold in solution small amounts of the red suboxid, obviously interfering with the detection of traces of dextrose. Reductions obtained under such circumstances are never typical. Very frequently under these conditions, and particularly if the mixture has been boiled even for only a few seconds after the addition of the urine, the greenish solution slowly takes on a dark, yellowish brown color, then becomes more turbid, and eventually, on standing, there separates out a finely divided, opalescent, yellowish green, cloud-like precipitate, which only settles out completely after the tube has been allowed to stand over night. In certain cases this reaction does not begin until a few minutes have elapsed after the addition of the urine. Such a reaction may be termed a pseudo-reaction. We recently had occasion to observe such changes occurring in concentrated urines of dogs even after the addition of only 8 to 10 drops of urine.[2] It is our conviction that this reaction is not due to the presence of an excessively large quantity of any weak reducing compound, such as may occur in the urine, but rather to the presence of one or more various conditions, a few of which are outlined above. The partial reduction of the copper occurs from causes other than the presence of dextrose, since, in the great majority of such cases, when the following details are observed, this obscure reaction never takes place.

The method of testing urines qualitatively for dextrose, as I employe and recommend it, as reducing to

* From the Department of Physiological Chemistry, Bender Laboratory. This investigation was pursued under a grant made by the Committee on Scientific Research of the American Medical Association. The earlier part of the work was done in collaboration with Dr. H. E. Robertson, formerly an assistant in the Bender Laboratory, who made a preliminary report at the Boston meeting (1906) of the American Medical Association.

1. Mayer (Paul): Unvollkommene Zucker oxydation im Organismus, Deutsche med. Wochschr., 1901, No. 16, 243; ibid., 1901, No. 17, 243; ibid., 1901, No. 17, p. 262.

2. Pearce (R. M.) and Jackson (H. C.): The Production of Cytotoxic Sera by the Injection of Nucleoproteids, Jour. of Infect. Dis., 1906, iii, 742.

the lowest minimum the possibility of the above errors in results, and as efficient in easily detecting dextrose in amounts as low as 5/100 per cent., as well as in eliminating the reducing action of other compounds, is as follows: The sample is first tested carefully for coagulable proteids; if these are found to be present they are removed by heat and acetic acid. About 4 to 5 c.c. freshly prepared, three times diluted Fehling's solution is brought just to the boiling point and immediately two drops of the proteid-free urine are added and the tube shaken thoroughly. If the urine contains over 2 per cent. of sugar a yellowish-red precipitate immediately appears, changing gradually to a brownish red or bright red and which settles out slowly, leaving a greenish-blue supernatant fluid. Under these conditions it is better to roughly dilute the urine with two to four volumes of water, according to the strength of the reaction, and to perform the test again.

With strengths of dextrose of from ½ to 2 per cent., two drops of urine tested as above will cause a characteristic precipitation of red sub-oxid of copper about which there can be no doubt. With the smaller percentages the change may come slowly, but even then heat need not be applied after the urine is added. The blue color of the unchanged Fehling's solution takes on a greenish hue and a turbidity appears which makes the mixture look somewhat smoky. This is caused by a very finely divided yellowish or red precipitate appearing in the blue solution. Little change may be seen by transmitted light, but by reflected light a brownish-red tint is evident, which finally develops into a decided light red precipitate, gradually settling out and leaving a clear blue supernatant fluid. Such a change is, of course, the typical Fehling's reaction, and when the test is performed with such diluted urine as above indicated the reaction can only be ascribed to dextrose. The pentoses, lactose and even maltose, by this method, do not give this characteristic reduction. Urines showing this reaction always give a reaction with Nylander's solution.

If no change occurs in the Fehling's solution after the addition of two drops, as above, the mixture may again be warmed just to the boiling point, and from two to four more drops added and the mixture observed. This should be repeated until in all twenty drops have been added. If nothing occurs at this point the urine does not contain dextrose to the extent of 0.5 per cent. As a routine, one then adds about one-half as much Fehling's as there is urine, boiling for ten seconds in order to obtain, if possible, the pseudo-reaction described above. This occurred in 5 per cent. of the normal urines tested by us. The time at which it appears on standing, and the depth of the turbidity and yellowish-green opalescence varies in a manner the cause or reason for which we are as yet unable to explain absolutely.

Considerable success has also been obtained in the use of Gerrard's[3] solution as a possible substitute for Fehling's quantitative procedure; while, perhaps, a little more cumbersome in its preparation than Fehling's solution, the sharpness of the end point in the titration is so greatly increased that it can be employed in some urines where Fehling's solution is impossible. Since the solution has found so little recognition in the American text-books, I detail its preparation and use.

Dilute 100 c.c. of Fehling's solution with about 300 c.c. of water; boil this mixture, at the same time adding cautiously an approximately 5 per cent. solution of potassium cyanid until the blue color has just disappeared. Then dilute the mixture to 500 c.c. with water and keep in a stoppered bottle in the dark. For the titration take 50 c.c. of this solution and add 10 c.c. of Fehling's solution. Boil the solution in a porcelain dish and run in from a burette the urine diluted so that the dextrose strength is approximately ½ to 1 per cent. The complete reduction of the urine is evidenced by the complete decolorization of the blue mixture. The end point is the same as in Pavy's procedure, without the disadvantageous presence of ammonia. As the double copper cyanid undergoes no reduction, the calculation takes place in the same manner as in Fehling's method, in which 10 c.c. are also employed. This method has been controlled with Fehling's procedure and the two give identical results. Gerrard's method is, however, the easiest to perform.

Newmann's[4] orcin test, serving to distinguish the pentoses, glycuronates and dextrose, has been extensively employed and with considerable success. Three c.c. of the urine are treated with ten drops of a 5 per cent. alcoholic orcin solution and 10 c.c. meters of glacial acetic acid. The mixture is then brought to the boiling point and, after cooling, concentrated sulphuric acid is added, drop by drop, with shaking, until about twenty drops have been added. In the presence of pentoses the color becomes olive green, glycuronates turn the color violet and dextrose gives a carmine.

The other tests mentioned above were performed in the usual manner.

RESULTS.

In the first series of examinations 384 samples of supposedly normal urine of patients in the hospitals of Albany were examined in the hope of finding the pseudo-reaction mentioned above and of connecting it with the presence of glycuronic acid or glycuronates. In no case could there be determined the presence of these latter compounds in amounts more than the normal or sufficient to render it of value for diagnostic purposes.

Fourteen various samples of glycosuric urines were quantitatively examined, with the following results: Gerrard's and Fehling's quantitative methods agreed to within 1/10 per cent. The results by the saccharometer were uniformly lower and usually by 1/10 to 7/10 per cent. This difference agreed, however, with surprising accuracy with that found in the polarization determination before and after fermentation. The figures obtained by subtracting the results of polarization before and after fermentation corresponded to saccharometer readings to within 1/10 per cent.

These facts indicate that both quantitative copper tests include substances which are not dextrose and which turn the plane of polarized light to the left to the extent of from 1/10 to 7/10 per cent. (calculated as dextrose). The saccharometer readings do not include these compounds, hence they are not fermentable. As a conclusion from these examinations we may say that in these urines glycuronic acid or its salts was not present in excessive amounts.

In the second series of examinations attention was turned to the postoperative specimens in the hope that in the condition of diminished oxidation following anesthesia glycuronates might be detected in abnormal

3. Gerrard (A. W.): Cyankupferreagens z. Bestimmung d. Glucose, Jour. de Pharm. et de Chem., 1896, 3, 250; Chem. Centrbl., 1896, 2, 135.

4. Newmann (A): Neue Farbenreaktion der Zucker, Berl. klin. Wochschr., 1904, No. 41, 1073.

amounts. All the samples were voided within twelve hours after operation. In all 273 specimens were examined, of which 261 were voided after ether anesthesia, eleven following chloroform and one after a mixture of the two. Examination of the urines previous to the operations showed no reducing compounds to be present. Subsequent to the operations eleven samples of urine, voided after ether, gave positive reductions with Fehling's test, and on further investigation the reducing substance was shown to be dextrose in amounts from 0.2 to 1.3 per cent. The length and character of the operation apparently has no effect on the amount of dextrose eliminated. The patients were persons from 20 to 35 years of age. None of the chloroform samples or the chloroform-ether-sample resulted positively. This is probably to be explained by the use of oxygen during the operation, thereby preventing diminished oxidation in the tissues.

CONCLUSIONS.

1. Dextrose appeared in 4 per cent. of 261 samples of urine collected after operations in which ether was employed.

2. Neither glycuronic acid nor its conjugate salts are eliminated in the urine under conditions of diminished oxidation, such as occur during diabetes mellitus and ether or chloroform anesthesia, when the latter is combined with oxygen.

3. The pseudo-reduction obtained in about 5 per cent. of normal urines is to be ascribed to faulty methods of performing the test. It is not due to an increase in amount of uric acid or creatinin.

A PLEA FOR A MORE THOROUGH COURSE IN PRACTICAL PHARMACY AND PRESCRIPTION DISPENSING IN OUR MEDICAL SCHOOLS.*

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There is no subject that shall be presented before any section of this Association that is of greater importance to the medical profession of the United States at the present time than the subject of this paper. It is of greater importance now than it has ever been in the history of our profession, and this condition has been produced largely through the animosity that has been created against secret nostrums among the laity. This opposition has been developed chiefly through the influence of certain of our lay journals and periodicals, particularly *Collier's Weekly* and the *Ladies' Home Journal*. It is exceedingly unfortunate that the medical journals do not cooperate as they should, and that they are still in the grip of the proprietary medicine advertisers. To confirm this fact I sent recently an article, written on the proprietary medicine evil, to three of our most prominent medical journals, and, as expected, it was returned in each instance with a polite note of regret, stating that it was not suitable for publication in that journal. An examination of the advertising pages of these respective journals readily explained the reason. What a power is money! Yet we subscribe for these very journals.

Another factor is the crusade against proprietary medicines of unknown and indefinite composition, which are so freely advertised to the profession through detail men and fascinating clinical reports. In some instances the gift of several shares of stock paying large dividends is an alluring bait which, sad to relate, appeals to some individuals.

It is a pleasure to note that the better class of our profession is drifting more and more towards Pharmacopeial and National Formulary preparations in preference to these proprietaries. Yet an examination of any prescription file, as has been reported by a number of observers in the past two years, shows that the use of these proprietary preparations in most localities is not decreasing, and in many instances it is actually increasing, notwithstanding the above conditions.

Another important factor was the passage of the national Food and Drugs Act, which requires all medicines and food stuffs to possess a certain standard of purity, and which prevents adulteration and misbranding of foods and medicines. It is of especial value in the case of secret nostrums, as it requires each package of the preparation to bear a statement on the label of the quantity or proportion of alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate or acetanilid or any derivative or preparation of any such substances contained therein. There are few secret nostrums but possess at least one of the above ingredients in their composition, hence one can readily see the great value of this act in suppressing the use of these secret agents.

The fourth important factor is the excellent work that is being done by the Council on Pharmacy and Chemistry of the American Medical Association, which has been exposing the fraudulent character of a number of these secret agents through THE JOURNAL of the Association. This work should be highly commended by everyone, but it should be remembered that the work of this Council is bounded by reasonable limitations which should not be exceeded, as otherwise the very good that they expect to accomplish will be defeated. A word of caution is warranted as the result of several incidents recently.

Now is the time for action, and some of the leaders of our profession are actively at work and we should all fall into line and use our individual influence in these matters.

Less than a month ago Professor Osler, than whom we have no greater medical authority at the present time, gave an address before the Philadelphia Pathological Society at its semi-centennial celebration. Although speaking of "The Value of Special Pathology to the Medical Practitioner," he devoted nearly the half of his address to discussing the value of a proper training in practical pharmacy and therapeutics in our medical schools. He stated that he considers the present training insufficient, and makes a number of suggestions which are so much in accordance with my own views that I shall present some of them to you. Professor Osler stated:

The therapeutic art is the final goal to which the training of the medical student should be directed. The medical student should be taught the composition of drugs, their method of preparation and their physiologic action in the laboratory during the first two years, and then, during the third and fourth years, he should have demonstrations in the out-patient department and in the wards of the hospital, in small section

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

classes, in which, in a systematic manner these medicinal agents should be studied in their clinical application. These classes should be assigned to several instructors, as no one man can cover thoroughly the entire subject.

1. The fundamental laws governing each disease should be studied, then the medical history, etiology, course and important features and complications of each disease considered and finally the distinction between important and unimportant symptoms.

2. The hygienic and dietetic management should be studied in the clinic, the uses of massage and other agents, as electricity, should be studied. Too often the student is compelled to obtain this information in a haphazard way. Students should prepare the nutrient injections which they order for a patient, and they should be drilled in hydrotherapy and massage. Considerable of the practical work as done at present by the nurses should be done by the student. A number of graduates do not know how to give a cold bath or sponge, or even to give a hypodermic injection properly. One cold bath would be all that a patient would require, if some of our recent graduates should administer it.

These subjects should be taught the students individually and in sections in the wards. Demonstrations in psychotherapy by one qualified should be presented, as for example, the Weir-Mitchell treatment, and others. It is a common saying that in the Johns Hopkins Hospital they cure diseases by a combination of hope and nux vomica. Inspire your patients with hope. Galen says: "He cures most in whom the most have greatest confidence."

From the time a student enters college until graduation, I would have him study the application of the great drugs, as mercury, antimony, chinchona and opium. These are the four great drugs, as quoted by Jackson. I would not bother students with too many drugs, but follow with the application of those which he knows in the laboratory. It is better to know a few drugs well. There should be a class in the administration of anesthetics and each student should administer them, under the direction of an instructor. He should study the principal effects of digitalis in heart cases. Study Withering's introduction on foxglove. He should himself give inunctions and injections of mercury to a syphilitic child and should know thoroughly the history of mercury, and know all about the action of the iodids and bromids, and report cases showing the use of them. He should have a knowledge of purgatives and how to use them. Cinchona, its history and chemical constituents and uses. The action of nitrites on blood pressure, strychnin, alcohol and other drugs and their action on the heart and blood-vessels.

I would instruct him to use a few drugs, but to be skeptical about the Pharmacopeia as a whole. Franklin said: "He is the best doctor that knows the worthlessness of most medicines." This is the kind of training that should be given in the hospital during the third and fourth years. Each student should spend one hour daily in the out-patient department, and two hours daily in the hospital wards, with proper organization in the wards. This would not be too much time to study in the wards internal medicine and therapeutics.

Is it not remarkable that such statements as these from the lips of one who for the past ten years has been branded as a therapeutic nihilist, a fact that Professor Osler himself mentioned in his address?

There is some value in drugs after all, and I firmly believe that there are but few true therapeutic nihilists in actual existence, notwithstanding the fact that many practitioners would lead you to believe that there are. These very men who will stand up in medical meetings and condemn the use of drugs, in actual practice use as many drugs, and in many instances more, than the average practitioner. Examine the prescription files in their locality and convince yourself, as I have done repeatedly.

What is the true condition existing among the members of the medical profession at the present day in their relations to practical pharmacy? Is there any need for a more thorough course in practical pharmacy including prescription dispensing in our medical schools? These pertinent questions can best be answered in the following manner:

1. The majority of practicing physicians to-day have never seen a copy of the U. S. Pharmacopeia, and not one-third of them have ever seen inside a copy of the National Formulary.

2. Not one-tenth of the members of the medical profession are ordering the new official preparations of the last Pharmacopeia, and not one-hundredth those of the National Formulary.

3. But few members of the profession are using the new official names for drugs as designated in the last Pharmacopeia and National Formulary.

4. The great majority of practicing physicians are deficient in their knowledge of pharmacy, materia medica, prescription writing and prescription dispensing.

5. Men are practicing medicine to-day who have never heard of the National Formulary, much less studied it.

6. The use of proprietary medicines, and polypharmacy, the two bugbears of the profession, exist practically unchanged or but little diminished.

THE RESULTS OF PROPER TRAINING.

Now realizing, as we all do, that the present training in practical pharmacy, including prescription dispensing, is deficient, for I have never heard a medical graduate state that he had received a sufficient training in these subjects, what would be the result if every medical school in the United States would adopt a proper standard in these subjects?

1. The use of the semi-secret proprietary medicines, those of which only a portion of the composition is known, and the various secret nostrums, would be relegated to antiquity, and physicians would not prescribe any drug or preparation the exact composition of which is not known. This is the cure and the only cure for the secret medicine evil, and until the medical schools awaken to this fact the secret nostrum venders will continue to flourish, notwithstanding the agitation in the journals and periodicals and in local medical or other organizations.

2. Every physician graduate would know how to write prescriptions properly and correctly from the standpoint of compatibility. He would also know how to make his medicines palatable and agreeable, so that the only barrier that causes homeopathy to flourish would be broken down. This would end sectarian schools of medicine.

3. After making a proper diagnosis, the physician would then order the ammunition with which he expects to combat the disease in a scientific manner, because he would use his drugs understandingly and based on a proper knowledge of their physiologic action. We would then obtain some results from drug administration and we would no longer hear of therapeutic nihilists.

4. He would know in what form each drug should be administered in order to obtain the best therapeutic results. He would have, too, a correct estimate of dosage and not the approximate and indefinite form as is in vogue at present, as all powerful drugs in the future will be assayed for the amount of alkaloidal, glucosidal, resinous or other active constituents present (the U. S. P. now requires this in the case of twenty such drugs).

These agents will be chiefly used in their pure form

and separated from inert matter, which varies in different specimens of the same drug according to the season collected, methods of drying, age, etc. These active principles combine the advantages of concentration, accurate dosage, portability, purity, permanency, reliability in therapeutic effect and, last but not least, convenience of administration either in the solid or liquid state.

Another great advantage in the use of the active principles in preference to the usual Galenical preparation of drugs such as tinctures, fluid extracts, etc., was strikingly presented by the worthy president of this Association, Dr. Bryant, in his address at the opening session, in which he called attention to the excellent work that the New York City Board of Health has been doing during the past year to determine the great variation in the strength of these Galenical preparations as prepared by different pharmacists.

They purchased from various pharmacists tinctures, fluid extracts and extracts of such drugs as aconite, belladonna and opium and analyzed them for the amount of active matter, as, for example, the amount of aconitin in the aconite preparations, the amount of mydriatic alkaloids in the belladonna preparations, and the amount of morphin in the opium preparations, and they found a great variancy in strength, some being much more active than the official strength, others much weaker, the majority conforming to the latter class. The analysis of a tablet which was supposed to contain 1/100 grain of nitroglycerin, as designated by the label, showed 1/1600 of a grain.

Is it any wonder that physicians are often puzzled when they do not obtain proper therapeutic results? This same condition that has been found in New York City exists the same everywhere and could be proven if a proper investigation would be made.

5. This would eliminate polypharmacy, as each drug would be administered for a definite symptom or group of symptoms, and it would not be necessary to order a number of drugs in combination, with the hope that one would prove of at least some value to the disease under treatment, in other words, simplicity in medication.

THE MEDICAL CURRICULUM.

But the most important question of all is, what constitutes a proper and thorough course in practical pharmacy and what should be the minimum standard in our medical curriculum? It is a well known fact that in no other branch of medicine is there more variance in the course of instruction given than in the subjects of pharmacy, materia medica and therapeutics. In order to show the great disparity existing in our medical schools and also the great lack of uniformity existing, the latest catalogues of all the leading medical schools in the United States have been carefully examined and the results tabulated.

On careful analysis of the table I was at once impressed with the total lack of uniformity in every particular among the 84 medical schools represented. In the first place the number of hours devoted to lectures and recitations on pharmacy and materia medica varies from 15 hours to 300 hours in the 68 schools in which the hours are designated in the catalogue. In 16 schools the actual number of hours devoted to any portion of this subject are not given, hence they can not be computed in this series. In 31, about one-half, these hours also include the instructions given in the important subject of prescription writing, while in 41 this course in prescription writing is given in the third year, and in two instances in the fourth year. In other words, some schools devote twenty times the number of hours that others do to this portion of the subject. In all of the schools the lectures on materia medica and pharmacy are given in the first and second years except 6, in which they are given in the third year.

The number of hours devoted to pharmaceutical laboratory work varies from none in 17 schools to 130 hours as the maximum, with 1 school giving 16 hours optional laboratory work. One-fifth of all the medical schools give no practical work whatever in pharmacy. Is it any wonder that our graduates use proprietaries? They are not to blame, but the responsibility lies with the medical schools. In 25 schools the laboratory work is done in the first year, in 30 schools in the second year, in two schools in the third year, in 6 schools partly in the first and second years, 1 school in the second and third year, and in 1 the year is not mentioned, so we see lack of uniformity in this respect.

In regard to prescription writing, in about one-half of the schools this is included in the lecture course, while 11 schools give no training whatever, and 12 schools give it as a separate course but do not give the number of hours. The highest number of hours mentioned are 27 hours. In 7 of the schools prescription writing is taught in the first year, in 21 schools in the second year, in 41 schools in the third year, and in 2 in the fourth year. In only 9 of the 84 schools is a course given in prescription dispensing, and there is a variation of from 20 to 50 hours in the time devoted to it. In 2 schools it is given in the first year, in 3 in the second year, in 1 in the second and third years, in 3 in the third year and in 1 the year is not given. Now with these facts before us, need we be surprised that the average medical student is deficient in prescription writing and dispensing? He could be nothing else. When we find that one of our leading medical schools (a school that considers itself the standard) would attempt to cover the subjects of materia medica and pharmacy and also prescription writing in 15 hours, what must we think of the regular class of schools?

A course in prescription dispensing is certainly a forward step and one to be commended, and no medical school can graduate competent men in the art of prescription writing without a thorough training in practical prescription dispensing, in which each student individually compounds various types of prescriptions. There lies the solution of the whole problem. The course in prescription dispensing is best given in the third year, as the student is then better enabled to master the details pertaining to it. The total hours devoted to the entire subject varies from 45 to 324, showing that some students receive seven times the instruction of others in these subjects.

A SUGGESTED STANDARD.

As a result of the above investigation, the following is recommended as the minimum requirement necessary to give a thorough course in practical pharmacy in our medical schools: Ninety hours devoted to lectures and recitations on pharmacy and materia medica, with 30 hours laboratory instruction, in which representatives of all the official preparations should be made; this course is preferably given during the first or second year. Thirty hours devoted to prescription writing, in which course the student is thoroughly drilled in the

formation and writing of prescriptions demonstrating various combinations or drugs. Thirty hours devoted to practical prescription dispensing, in which various types of prescriptions should be dispensed by the student. These two courses should be given during the third year, for reasons stated above.

Thirty hours should be devoted to a course in pharmaco-dynamics, in which the action of the most important drugs is demonstrated. Total hours for the entire subject 210, in contrast to those of the above table. This, of course, should be supplemented by a thorough course in general and applied therapeutics during the third and fourth years. Each student should be given a thorough training in the use of massage and electricity, passive movements, the *x*-ray and other forms of radiotherapy, climatology and balneotherapy. He should also be trained in the use of anesthetics. All of this should be supplemented by practical work in the hospital wards, in which the use of each of these agents should be demonstrated practically, and, in addition, he should administer the various medicinal agents such as injections, inunctions, enemata, etc., for a certain period of time until he becomes proficient in every detail.

My earnest hope and desire is that this Section will appoint a committtee which shall suggest a suitable standard for the teaching of pharmacy, materia medica and therapeutics in our medical schools. If this is done I trust this Section may adopt it and bring it to the attention of the American Medical Association for its official sanction and recommendation and that each medical school in this country will adopt this as a minimum standard. A copy of these recommendations shall then be sent to the dean of each school to present to the respective faculties for adoption. If each medical college should adopt the above as a minimum standard on this important subject, then, and only then, would our medical graduate be able to write correct prescriptions for palatable preparations properly combined. The treatment of disease would then be based on rational therapeutics, as it should be.

When this day arrives, and I hope it is not far distant, then, and only then, will our work be complete, and coincident with this will disappear all proprietary and secret nostrums, and every physician will order scientific combinations, skilfully prepared by reputable pharmacists.

3705 Spring Garden Street.

DISCUSSION.

DR. GEORGE F. BUTLER, Chicago, emphasized that the only way to get rid of proprietary remedies is to teach medical students how to prescribe, and acquaint them with the physiologic and therapeutic action of drugs. The average medical student, he said, comes out of college to-day with a very little knowledge of these things. He comes up to the bedside, and not knowing his materia medica or how to write a prescription, he thinks of some proprietary medicine and prescribes it. Dr. Butler said that it is impossible to do away with the proprietary medicine business until the medical student is better trained in pharmacology, materia medica and therapeutics. He insisted that not only drug treatment, but all forms of treatment should be taught in medical schools. The subject is fully as important as bacteriology and pathology. He claimed that the doctor should be competent to judge of the quality and the character of the drugs he uses. It is just as much his duty to be sure of the quality and activity of a drug he gives to a patient, as it is the duty of the surgeon to be sure of the aseptic condition of his instruments. Dr. Butler suggested and urged the adoption of the resolution proposed by Dr. Thrush so as to stimulate greater interest in this work. He claimed to know of a number of medical colleges that do not teach materia medica and therapeutics at all, and of a number of state examining boards that do not examine on these subjects. Is it any wonder, then, he said, that the people buy "patent medicines" and patronize quacks? Physicians, he continued, are to blame for the discredit which the lay press casts on the medical profession, not only because of the disagreements between themselves, but because of their skepticism regarding the value of drugs.

DR. C. S. CHAMBERLIN, Cincinnati, O., said that the manufacturing pharmacist is only the servant of the medical profession; he may be over-enthusiastic sometimes, but, after all, it comes practically to a question of the law of supply and demand. The manufacturing pharmacist simply supplies what the doctor wants. As far as the nitroglycerin tablets, of which Dr. Thrush spoke, are concerned, all pharmacists know that tablets of nitroglycerin which contain the specified amount when manufactured may not contain that amount very long; but the doctors want nitroglycerin tablets and expect the manufacturing pharmacists to supply them. Dr. Chamberlin has knowledge that certain manufacturers have taken them off their list, knowing that they would not remain of indicated strength; but as the doctors have insisted on having them anyway, the manufacturer has been induced to replace them in his list to meet this demand from the physician. The manufacturing pharmacist, he said, is in the market to supply the demand.

MR. W. C. WESTCOTT, Atlantic City, N. J., thought that the pharmaceutic laboratory should be devoted to teaching materia medica. When lecturing on antiperiodics students should be given all the antiperiodics, told to mix them and see what happens; learn how much will dissolve and how much will not dissolve. In that way the subject of materia medica is made concrete, the students will learn something and the subject will become more interesting.

PROF. W. A. PUCKNER, Chicago, has studied teaching conditions in medical schools for many years, and he has always felt that there is something lacking before the present courses of instruction in materia medica, pharmacy and chemistry can be improved. Education in these branches of the teachers than those who teach materia medica is needed, and co-operation throughout the work. What, he asked, is the use of all the instruction in chemistry if it is not applied in other studies? What is the use of a poor teacher in pharmacy trying to teach the student pharmacy if in other departments of instruction a knowledge of pharmacy is ridiculed? The average instructor in a medical school does not know any pharmacy, and he will soon make the student feel that it is not the proper thing to know anything about pharmacy. Professor Puckner is convinced that until we require the other teachers in schools of medicine to understand pharmacy and the fundamental principles on which pharmacy is based, very little will be accomplished.

DR. H. E. LEWIS, New York City, emphasized the great necessity for improvement in the equipment and ability of the average retail pharmacist, not the men who have the degree of pharmacy, nor those who have studied pharmacy in a regular school, but the men whom physicians come in contact with every day in the practice of medicine. Dr. Lewis claimed that the fundamental causes of many of these questions that are so evidently bothering us to day begin right here. He regretted the undue attention that was being paid to the shortcomings of physicians, while ignoring those of the pharmacists. Pharmacy laws need building up as well as medical laws, and it is time that medical men arose and insisted that pharmacists carry out their directions and give them what they want.

DR. C. S. N. HALLBERG, Chicago, stated that it was possible that the entire nitroglycerin tablet matter was flashed in the newspapers of the country and used for the purpose of throwing discredit on the retail pharmacists. As a matter of fact, he said, it throws discredit on the manufacturing firms, the wholesalers and the physician. He agreed with Dr. Bryant that nitroglycerin is the last thing in the world that ought to be presented in tablet form, and manufacturing pharmacists ought not to continue its manufacture. It sounds very well, he continued, to speak about convenience and elegance, and all

that, of medication, but dry medication of late years has run mad. It is the old elixir craze again, where elegance and palatability rather than medicinal effect were considered the paramount object. Pharmacists, unfortunately, have not maintained a stand against the tablet idea, against every impossible combination that came along, just as in the case of elixirs, every possible and impossible combination, bismuth, pepsin, etc., were put out. In reply to Dr. Lewis' suggestion, Dr. Hallberg said that there is an American Pharmaceutical Association which is pretty near as old as the American Medical Association.

It has gone along in a slow sort of way, its principal ambition being to act as godfather to the Pharmacopeia and the National Formulary. The association has received a new lease of life within the last few years, has established local branches in the leading centers and the purpose is to collect the best educated, experienced pharmacists and to show them the opportunities that there are to serve the medical profession and get them in line with a broad movement for better pharmacy. This movement has already assumed tangible shape in all the larger cities of the country. Therefore, Dr. Hallberg asked that the physician be patient and not condemn pharmacy or pharmacists entirely, giving them a little time to separate the sheep from the goats, so that they may make some tangible claim to some kind of a profession in the service of medicine.

PROF. HENRY KRAEMER, Philadelphia, thought it cause for congratulation that the evils existing in the practice of both medicine and pharmacy are being recognized and measures taken to eradicate them. In looking over the exhibit of the U. S. Pharmacopeia and National Formulary preparations, it occurred to him that if any physician experiences difficulty in obtaining these preparations, it may be due, in part at least, to the fact that there has not been a demand for these preparations, that the pharmacist has been accustomed to dispensing certain specified preparations in their stead.

DR. W. J. ROBINSON, New York City, feared that the work of the Council on Pharmacy and Chemistry was not thoroughly understood by the practitioner, because the Council in passing on the composition of a product does not intend to pass on its therapeutic value. It simply means that its composition is true to its claims, but the fact that a drug has been passed by the Council means nothing whatsoever as to its therapeutic value. It does not mean that it is a superior drug therapeutically or clinically. Dr. Robinson considered it important to impress on the physician that the Council's approval means merely that the composition of the preparation is more or less true to its claimed formula.

Dr. Robinson agreed with Professor Puckner that too much chemistry is taught in medical schools. He has been amazed at the kind of examination given in chemistry. In one examination seven out of ten questions were of no value in the practice of medicine—as, for example, how to prepare silver from the ore. Dr. Robinson is of the opinion that the chemistry taught in our medical schools should be that adapted to the practice of medicine; i. e., how to test for albumin and sugar in the urine; how to test for impurities in potassium iodid; how to avoid gross incompatibilities, etc. With regard to the active principle being superior to the galenical preparations, Dr. Robinson said that there is no question whatever about this. He did not think that any one could deny that where the active principle is isolable, it is in every way superior to the galenical preparations. Of course, he said, there are some drugs, like ergot, where the active principle can not be extracted, and then the best galenical preparation must be used. Dr. Robinson agreed that nitroglycerin in tablet form is an absurdity. This can not be compared with the active principles of other drugs, such as aconitin. Nitroglycerin is a volatile substance; spartein sulphate is a crystalline substance and can be well given in the tablet form.

DR. M. G. MOTTER, Washington, D. C., thought that pharmacology is a science which is being evolved out of the old art of therapeutics. Because of the congestion of the medical curriculum, Dr. Motter questioned whether it is wise to take more of the student's time for the study of pharmacology and materia medica. The study can not be placed on a therapeutic basis, save through the scientific aspect of therapeutic remedies. So far as therapeutics is concerned, that, he said, is an art, and it is an art which is to be taught at the bedside—not by didactic lectures. The whole question goes back again to the one great question of the education of the medical student, back still further to his preliminary training. The medical schools should insist on it that the students who matriculate are thoroughly prepared to take up the more advanced subjects of the medical course.

MR. M. I. WILBERT, Philadelphia, does not believe that pharmacy, *per se*, has any place in the medical school. Instruction in this line should be confined to pharmacognosy or the study of the physical properties of drugs and to pharmacodynamics, or the study of the action of drugs. If a medical man is thoroughly conversant with the appearance and uses of a limited number of remedial agents and has had a proper preliminary training, he will not need instruction in the art of prescription writing or of prescription dispensing. On the other hand, if a physician intends to go into the drug business or to dispense his own medicines, then it is right and proper for him to take a course in pharmacy, in a properly equipped pharmaceutical school.

If the recent graduate in medicine has had a thorough course in pharmacology, knows about drugs and the action of drugs, and is fortunate enough to be in a hospital where he is not compelled to use complicated concoctions and antiquated formulas, he will go out of that hospital with a skill in the art of medicine that will suffice for all practical purposes. Mr. Wilbert recognizes that the science of medicine is something quite apart from the art of medicine. The art of medicine can not be taught, it must be acquired; the science of medicine can and should be taught on the basis of a thorough preliminary education. Mr. Wilbert pleaded that medical men of the present time exert their influence to have future pharmacists better educated, more capable, than those of the present time. It is clearly within the province of the medical practitioner to insist that the pharmacist know something of the science of his own business.

DR. M. CLAYTON THRUSH, Philadelphia, urged physicians to see to it that their prescriptions are compounded by reputable pharmacists. In some states the pharmacist is graded by the state board according to the knowledge he possesses. If he is particularly good he is classed as a pharmacist; second, as a druggist, and third as an apothecary. In regard to medical education, Dr. Thrush referred to a movement begun by the Philadelphia Association of Retail Druggists recently. This association is going to send out, complimentary, a series of little books. The mission which this work is to fulfill can only be properly accomplished by the cooperation of the medical profession.

It becomes, therefore, of the greatest importance that the members of this profession, throughout the country, be made acquainted with the existence, contents and object of these books, and that, if the same be approved by them, as is confidently expected, they will consent to accept the preparations made in accordance with the formulas contained therein, instead of designating any special maker's product.

The first book discusses the non-toxic antiseptics based on U. S. P. and N. F. formulas, such as Liquor Antisepticus Alkalinus (N. F.); Liquor Cresolis Compositus (U. S. P.); Liquor Antigerminarus (N. F.); Liquor Sodii Boratis Compositus (N. F.); Pulvis Antisepticus (N. F.); Liquor Antisepticus (U. S. P.). At the bottom of each page are given descriptions of physical properties and tests. These have been mailed to all the physicians. The last page states that the foregoing formulas are confidently recommended to the medical profession, in the belief that these preparations will meet the needs of the physician, without resort to the use of proprietary remedies of a similar character. That, Dr. Thrush said, is the very thing that we are working for. We want the pharmacists and physicians of this country to work hand in hand to elevate the two professions. They are of a kindred nature. The object of the paper, he said, is to elevate the teaching of pharmacy in medical schools and to stimulate a closer relation between the sciences of medicine and pharmacy.

CALMETTE'S OPHTHALMIC REACTION TO TUBERCULIN.

PRELIMINARY REPORT BASED ON TWO HUNDRED AND FORTY-TWO CASES.*

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In June, 1907, Professor Calmette, of Lille, France, described a new method of administering tuberculin for diagnostic purposes. He had observed that when one drop of a 1 per cent. glycerin-free solution (suspension?) of tuberculin, in distilled water, was instilled into the conjunctival sacs of individuals clinically tuberculous, there occurred a more or less characteristic, local, inflammatory reaction. In general, such changes were not noted when the tuberculin preparation was instilled into the conjunctival sacs of persons not clinically tuberculous. This reaction has been called the "opthalmo-", the "oculo-", or the opthalmic, reaction to tuberculin.

Since the preliminary report of Calmette a considerable number of observers, mainly French, have published results of researches on the ophthalmic reaction. As is to be expected, one encounters in their communications some lack of unanimity as to the real diagnostic value of the reaction. Inasmuch as comparatively little work has been reported, it seems not inappropriate to review rather minutely the results of the tests in the hands of the French observers. The following table presents in detail the observations in patients suffering from a wide variety of ailments, and also in individuals apparently normal (Table 1).

In summary it will be seen that of 185 cases clinically tuberculous, 176 gave positive reactions and 9 negative reactions. Of 28 cases doubtfully tuberculous, 21 gave positive reactions and 7 negative. Of 188 persons suffering from disease not tuberculous, and including a fair proportion of apparently normal individuals, 186 gave negative reactions and only 2 were positive. While the evidence seems fairly convincing, yet the failure of observers to reach a common and definite conclusion calls for explanation.

There are several factors to be considered, among which we would mention, (a) the possibility of poor technic in administering the tuberculin; (b) the possible difference in the tuberculin preparations used; (c) the difficulties encountered in demonstrating certain cases to be clinically tuberculous; (d) the lack of definite or uniform standards for judging the occurrence or the severity of the ophthalmic reaction; (e) the possible presence of unknown conditions which may modify or prevent the reaction in tuberculous patients, or which might bring about a reaction in patients non-tuberculous.

(*a*) Poor technic in the administration of the tuberculin is easily possible. In the first place, the preparation as described by Calmette as a "solution" appears to be really a suspension of cell bodies more or less altered in properly preparing for instillation. One can readily see that if pains are not taken to keep the suspension homogenous, differences in individual dosage may occur. We have also observed that unless care is taken to draw the lower eyelid downward and outward much of the instilled drop is likely to be expelled when the patient approximates his lids. The retention of the drop is facilitated by having the subject lie down or incline his head backward, the lower lid being held out from the eyeball in the meantime and gently manipulated so as to distribute the suspension over all parts of the conjunctiva. If the patient then close his eyes for a brief period the further retention and distribution of the tuberculin is assured.

TABLE 1.—ANALYSIS OF WORK PREVIOUSLY REPORTED BY FRENCH OBSERVERS.

No. of cases.	Clinical diagnosis.	Reaction.	Reference.
63	Tuberculosis: Pulmonary, all stages pleurisy, bronchitis, meningitis, adenitis, osteomyelitis, various joints, kidneys, testes, anal fistula, hernia, coxalgia	+	Calmette, Breton, Painblan and Petit.[2]
52	Non-tuberculous: Typhoid fever, rickets, syphilis, tabes, hysteria, chronic valvular lesions, arteriosclerosis, carcinoma, eczema, arthritis, bronchitis, infantile paralysis, osteomyelitis, rectal prolapse, congenital dislocation, cystitis, urethritis, prostatic neoplasm, renal tumor, diabetic gangrene, knock-knee, varicocele	0	
4	Pulmonary tuberculosis—bacilli	+	Grasset and Rimband.[9 12]
3	Pulmonary tuberculosis—no bacilli	+	
5	Pulmonary tuberculosis—doubtful	+	
1	Not tuberculous	+	
1	Clinically tuberculous	0	
3	Doubtfully pulmonary tuberculosis	0	
14	Non-tuberculous	0	
8	Pulmonary tuberculosis—one doubtful	+	Derchend.[2] Quoted by Calmette.
13	Emphysema, goiter, aneurism	0	
12	Tuberculosis—3 cases, doubtful	+	Prouff.[2]
6	Apparently normal adults	0	
4	Pulmonary tuberculosis	+	Des Plats.[2]
5	Apparently not tuberculous	0	
14	Pulmonary tuberculosis and coxalgia.	+	Helipre and Hue.[2]
8	Pneumonia, appendicitis, myocarditis	0	
7	Pulmonary tuberculosis	+	Grillot.[2]
2	Exophthalmic goiter and whooping cough	0	
2	Pulmonary tuberculosis	+	Desbonnets.[2]
2	Bronchitis and pericarditis	0	
19	Pulmonary tuberculosis	+	Letulle.[4 10]
2	Lead poisoning and Pott's disease	0	
25	Hospital patients-selected at random—not tuberculous	0	
12	Tuberculous—all forms	+	Montagnon.[9]
2	Tuberculosis clinically	0	
5	Doubtfully tuberculous	+	
8	Not tuberculous	0	
11	Tuberculous	+	Aubaret and Magne.[13]
3	Doubtfully tuberculous	+	
1	Doubtfully tuberculous	0	
19	Tuberculous	+	Citron.[11]
6	Clinically tuberculous	0	
8	Doubtfully tuberculous	+	
3	Doubtfully tuberculous	0	
44	Apparently non-tuberculous	0	
1	Apparently non-tuberculous	+	

(*b*) Up to the present time practically all the published work has been done by French observers, and in nearly all instances the tuberculin preparation has been supplied them from the Pasteur Institute. It would seem, therefore, that if directions for making up the suspensions to be instilled were properly observed there should be no cause for error from this source. The possibility of error from the use of prepations furnished from different strains of tubercle bacilli, or from bacilli grown on different varieties of culture media, has to be considered. One might question whether or not freshly prepared suspensions were used, as suggested by Calmette.[1]

(*c*) While it is to be admitted that there are certain cases in which it is almost impossible at the time of examination to make a clinical diagnosis of tuberculosis,

* From the Clinic of Internal Medicine of Professor George Dock.

yet it would seem probable that in those patients clinically non-tuberculous who gave positive ophthalmic reactions the hypodermatic injection of a standard preparation of tuberculin might furnish a valuable check on the reliability of the eye manifestations. It is so common to discover, at autopsy or accidentally, latent or even active tuberculous foci in persons in whom the process was not suspected clinically, that the occurrence of a positive reaction in apparently normal individuals should occasion no surprise. In some instances more careful physical examination might have revealed signs of tuberculous infiltration, as was shown in a case of typhoid fever which gave a distinct ophthalmic reaction, as reported by Montagnon.[9]

(*d*) and (*e*) We refer below to the method of judging the occurrence of the reaction and also to its reason for existence.

It occurred to us that a test so simple in its application, apparently, as the ophthalmic reaction to tuberculin, might prove of great practical value both in and outside of institutions. Its technic is so easy of acquirement; when present its manifestations are so distinct, and the whole procedure causes so little discomfort to the subject, that it appeared that the advantages over the subcutaneous injection of tuberculin were many and obvious. In addition, there seemed to be nothing that would contraindicate the employment of the test in febrile cases, where, of course, tuberculin used hypodermatically would be of doubtful value.

Preparation Used: We were early confronted with the difficulty of getting a dependable preparation of tuberculin with which to carry out our work. Outside the Pasteur Institute in Paris, the product did not appear to be obtainable. From that institution it is marketed, according to the published reports, in glass tubes, each containing a weighed amount of the tuberculin prepared according to Calmette's original description[1] (dried tuberculin precipitated by alcohol at 95 degrees). Directions are furnished for its solution (?) in sterilized, distilled water. After considerable inquiry we were finally able to secure a stable, easily-handled, and what has since proved, dependable preparation, through the courtesy of the experimental department of Parke, Davis & Co., of Detroit. The dried tuberculin (essentially tubercle bacilli, or fragments of such, killed by heating at 80 degrees*) has been furnished in tablets of such size that one tablet dissolved (?) in one cubic centimeter of water yields a 1 per cent. suspension. We have preferred to use normal salt solution instead of distilled water, as suggested by Calmette. It appears to us that distilled water might of itself be irritant to some conjunctivæ. The suspension made with the tablets is almost clear, after standing for a few minutes. It apparently has no irritant properties when instilled into the conjunctival sacs of normal individuals. The dried tuberculin has also been furnished to us in bulk by the same firm. With it we have obtained results similar to those obtained from the tuberculin in tablet form. It has seemed to us advisable to keep the tuberculin, both in tablet form and bulk, in a cool, dark place. We have made up only sufficient suspension for immediate use, and have thus guarded against deterioration or contamination from exposure.

Method of Work: Our cases have been such as one encounters in the service of a general hospital. We have been rather advantageously situated, inasmuch as we have been able to keep many of our patients under observation for a considerable length of time, and have thus been able to follow up reactions to the end or to guard against the missing of reactions which appeared early or were delayed.

At the beginning of our work it was customary to instil one drop of the 1 per cent. suspension in normal salt solution, into the inner canthus of the right eye at bedtime. It was early apparent that one must be very careful, else little of the instilled suspension was retained, inasmuch as patient frequently winked or wiped out much of the suspension. Under those conditions accurate observation was impossible. The method adopted for securing the retention of the maximum amount of the suspension has already been described. Before instilling, the conjunctivæ of both eyes were carefully compared, and in case of any abnormality notes were made to that effect. The ward officers and night nurses have been instructed in the method of observing changes resulting from the instillations. The patients have been informed of the nature of the test and have been told how to note alterations in their eyes. A card index of each patient instilled has greatly facilitated the following of the reactions.

A majority of our recent cases have been instilled early in the day in order that the early stages of the reaction could be followed and that photographs could be made when desired. In all cases temperature, pulse and respiration have been followed when practicable. Dispensary patients have been directed how to examine their eyes and to report alterations in them.

We have endeavored to make our work representative, and with that point in mind have tested cases from practically all services at the University Hospital. In all the patients instilled the reaction has been looked for at least once, in many instances several times. In doubtful cases, or in cases of particular interest, the instillations have been repeated several times, with results to be described later. A large number of persons instilled were people affected with some ailment. It was deemed advisable to test the effect of the tuberculin on apparently normal individuals. This was made possible through the interest of the two upper classes in the medical department of the university.

Table 2 shows the scope of the work. In our present state of knowledge of ophthalmic reaction it seems advisable to give details concerning the subjects tested. It will be seen that we have made 273 instillations on 242 different individuals. In 39 instances we have obtained distinct and unmistakable ocular manifestations. In 5 cases the reaction has been doubtful. Of the cases showing positive manifestations, all except 10 were clinically diagnosed tuberculous. In no case of active tuberculosis, pulmonary or otherwise, with or without bacilli, was a negative reaction shown. In the 10 cases not clinically diagnosed tuberculous which gave positive reaction, three individuals gave a history of earlier tuberculous processes. In the 7 remaining cases one was suspected of being syphilitic. The remaining cases were poorly nourished patients, clinically, hypospadias, hernia, tertiary syphilis, melancholia, clubbed feet (2) and

* Through the courtesy of Dr. Houghton of the Experimental Department of Parke, Davis & Co., we are able to offer the following information concerning the tuberculin preparation which was used in our experiments: The growth was obtained from active, human tubercle bacilli on 5 per cent. glycerin bouillon. To obtain a representative preparation the growth from five strains was used. This was concentrated to 1/10 its volume at 80 degrees, filtered and purified with five volumes of 94 per cent. alcohol. After decanting and refiltering, the precipitate was dissolved (?) in normal salt solution, then re precipitated with 94 per cent. alcohol. The precipitate was then dried in vacuo. This residue was compressed into tablets. Some of it was furnished in bulk.

chronic meningitic. In but one of the cases was a marked reaction obtained.

There were 198 negative reactions. Among these there were included 6 patients who had been clinically diagnosed tuberculous. In but one case was there any reason to suspect that the process was active. This patient failed to respond to even a third instillation of tuberculin. Of the 198 negative reactions, 126 occurred in hospital patients affected with at least one ailment. In none of these was there a history of tuberculosis or any suspicion entertained as to its probable existence. Of the 76 apparently normal adults of both sexes, but two reacted. Inquiry showed in one case an old tuberculous knee (in this case the reaction was very early and fleeting), and in the other case, where the reaction appeared moderately severe at the first instillation, the history and the physical findings were strongly suspicious. In 31 of the 242 cases there were two or more instillations, in 6 cases there were three instillations. No case which reacted to the first instillation failed to react to a second or a third.

TABLE 2.—ANALYSIS OF WORK FURNISHING THE BASIS OF THIS PAPER.

A.—Medical Service of Professor George Dock.

No. of cases.	Clinical Diagnosis.	Reaction.	Remarks.
3	Pernicious anemia	0	
1	Hodgkin's disease	0	
3	Arteriosclerosis	0	One, slight, but fleeting +?
1	Aneurism—aortic	0	
1	Constipation and anemia	0	
1	Cystitis (t. b. c.?), patient male	+	Had not responded to mgs. 1 and 5 TA.
3	Obstructive jaundice—gallstones?	0	
1	Mediastinal tumor—syphilitic?	0	
2	Chronic valvular lesions	0	
1	Malaria—chronic and quiescent	+	Slight after 1 mg. TA.
1	Cardiac hypertrophy, arteriosclerosis with retinal hemorrhages—syphilis?	+	First instillation.
1	Myocarditis and nephritis	0	
1	Mucous colitis	0	
3	Gastritis	0	
4	Carcinoma of stomach	0	Three instillations in one case.
2	Ulcer of stomach	0	
1	Tertiary syphilis with retroperitoneal tumor	+	Slight to two instillations.
1	Typhoid fever	0	Two instillations.
1	Pneumonia	0	
1	Chronic bronchitis (t. b. c.?)	+	Third instillation marked.
5	Chronic bronchitis (t. b. c.?)	0	Three instillations in two cases.
5	Pulmonary tuberculosis with bacilli	+	
4	Pulmonary tuberculosis—no sputum	+	
2	Pulmonary tuberculosis—old case	0	One instillation.
1	Arthritis (t. b. c.?)—signs in chest	+	Marked reaction after 1 mg. TA.
1	Miliary tuberculosis—autopsy	+	After injection 1 mg. TA.
1	General glandular enlargement (t. b. c.?)—Hodgkin's disease	+	After injection, 1, 5, and 10 mg. TA.
2	Cervical adenitis	0	Two instillations.
1	Old empyema	0	

B.—Surgical Service of Professor de Nancrede.

2	Appendicitis	0	
7	Tuberculosis of hip joint	+	One slight.
1	Tuberculosis of hip joint (suspected)	0	Two instillations.
1	Tuberculosis of hip joint, quiescent for three years	0	One instillation.
4	Spinal caries	+	First instillation.
3	Tuberculosis knee joint	+	First instillation.
3	Osteomyelitis	+	Two instillations in one case.
1	Tuberculosis of wrist joint	+	Slight at first instillation.
2	Club-feet	+	Rachitic children—reaction slight.
1	Club-feet	0	Two instillations.
1	Inguinal hernia	+?	Very slight at first instillation.
1	Hypospadias	+?	Very slight.
1	Infiltrating tumor of forearm	+?	Very slight.

C.—Gynecologic Service of Professor Reuben Peterson.

9	Carcinoma of uterus and appendages	0	
3	Endometritis—gonorrheal?	0	
3	Uterine fibroid	0	
7	Uterine displacement and endometritis	0	

Obstetric patients—Maternity Ward.

5	Antepartum	0	
2	Postpartum	0	
2	Newborn	0	

D.—Pediatric Service of Professor David M. Cowie.

5	Feeding cases—infants	0	
1	Suspected pulmonary tuberculosis	0	One instillation.
1	Marasmus	0	

E.—Psychopathic Service of Professor Alfred Barrett.

1	Paramyoclonus multiplex	0	
2	Hysteria	0	
1	Aphasia—syphilitic?	0	One instillation.
1	General paresis	0	
1	Dementia præcox	0	
1	Korsakoff's psychosis	0	
3	Paranoia	0	
4	Mania—depressant	0	One slight, but fleeting reaction to one instillation.
1	Cerebral tumor—syphilitic?	0	One instillation.
2	Melancholia	0	
1	Neurasthenia	0	
3	Not classified	0	

F.—Otolaryngology Service of Professor R. Bishop Canfield.

1	Post-operative, double frontal sinus disease	0	
2	Post-operative radical mastoids	0	
3	Enlarged tonsils—chronic	0	

G.—Neurologic Service of Professor Carl Camp.

2	Parasthesia—feet	0	
1	Traumatic myelitis	0	
1	Combined degeneration of cord—syphilitic?	0	One instillation.
1	Hemiplegia—cerebral syphilis	0	Two instillations.
1	Chronic meningitis—syphilitic or tuberculous?	+	Slight reaction to first instillation, marked to second.
3	Neurasthenia—sexual	0	Two instillations.
1	Primary lateral sclerosis	0	Two instillations.
1	Infantile paralysis	0	Two instillations.
1	Epilepsy	0	
1	Traumatic neurosis	0	
1	Chronic lead poisoning	0	
1	Sciatica	0	
1	Paraplegia—fractured spine	0	Two instillations.
1	Hysteria	0	Two instillations.
1	Melancholia	0	

H.—Apparently Normal Adults, Both Sexes, Not Hospital Patients. Number, 76. Reaction, 74 negative, 2 positive (both at first instillation).

THE REACTION.

In his original communication Calmette describes the ophthalmic reaction as a slight swelling and redness, localized principally about the caruncle, the inner canthus and the conjunctiva. Later writers (Aubaret and Lafond,[8] and Aubaret and Magne[15]) distinguish four degrees of reaction, according to the severity of the inflammatory change. It would perhaps be of value to summarize their classification here:

1. *Mild Form:* A diffuse redness is seen over the inferior tarsal conjunctiva, and sometimes about the caruncle and the semilunar folds. In some slightly more pronounced reactions the lymphoid follicles of the tarsal conjunctiva become more prominent, and the injection

is seen extending upward over the ocular conjunctiva at the inner canthus. After twenty-four to thirty-six hours there remains an ecchymotic appearance about the injected portions. Functional disturbances are not noted beyond a slight increase in lachrymation. Such mild phenomena readily escape notice. In examining doubtful cases the writers suggest that the lower lids should be well drawn down so that the palpebral conjunctivæ of both eyes may be seen and thus compared. The eyeballs should be abducted alternately as far as possible in order to displace the conjunctiva at the inner canthus. The caruncles and the semilunar folds may thus be compared.

2. *Moderately Severe Form:* This type begins as the mild form, but the injection soon extends beyond the cul-de-sac and manifests itself as a network of vessels at the periphery of the bulbar conjunctiva. Generally the injection is most marked at the inner canthus. Lachrymation is abundant, and a few filaments of mucopus are seen. Sometimes a little of the Meibomian secretion gums the eyelashes together and dries on the free edge of the lids. There is a little smarting and sometimes a feeling as of a foreign body in the eye.

3. *Intense Form:* The bulbar conjunctiva is involved in the general reaction of the lids. There is no pericorneal injection, which seems to show that the cornea, the iris and the deeper tissues are not affected. The palpebral conjunctiva takes on a velvety appearance, the folds of the cul-de-sac are very much swollen and the eyeball is crossed by large, vascular trunks. Lachrymation and purulent secretion are very abundant. There is photophobia and a subjective feeling as of grains of sand in the eye. The reaction persists for five or six days and occasionally even longer.

4. *Very Intense Form:* In some instances the reaction is very pronounced. The various parts of the conjunctiva are rapidly involved. The bulbar conjunctiva becomes chemotic. There is marked swelling of the parts and considerable edema of the eyelids. Lachrymation is very abundant and there is much mucopurulent secretion. True pains radiate to the temple and the forehead. The acute stage may persist as long as eight days and the conjunctiva may not return to the normal before a month has passed.

It has not appeared to us that this detailed classification is satisfactory. It seems unnecessarily cumbersome and a refinement of observed facts that is not called for clinically. While no two reactions are alike in positive cases, yet whatever reaction results is essentially a conjunctivitis. The variations in intensity, with or without exudate, in the present state of our knowledge, appear to be a detail of no real clinical value. Comparison between the instilled and the non-instilled eye, before and after the instillation, is sufficient in all cases to determine whether or not there is a specific conjunctivitis present, or the aggravation of one which existed before. If the case is at all in doubt, repeated instillation, after a reasonable time has elapsed, clears up the diagnosis. While a typical reaction has not appeared to us, a description of what usually follows in tuberculous cases when the preparation is instilled into the conjunctival sac may be of value.

Local.—From two to three hours after the instillation of the tuberculin there is a slight smarting sensation along the edges of the lids and at the inner canthus. This is soon followed by slightly increased lachrymation and a feeling of stiffness in the lids of the affected eye. Examination of the conjunctiva, at the end of three or four hours, usually reveals a moderate degree of redness and swelling of the palpebral portion and at the inner canthus. The caruncle is slightly swollen. A delicate tracery of blood vessels appears on the ocular conjunctiva below the equator and frequently more so toward the inner surface. In another hour or two there is slight photophobia, and filaments of a thin, grayish-white fibrinous exudate may appear on the eyeball and over the palpebral conjunctiva (Fig. 3). There is frequently a perceptible collection over the caruncle. The swelling of the lids produces a noticeable narrowing of the palpebral aperature (Figs. 1 and 2). There appear to be no pupillary changes, so far as our observations go, but such have been noted by some writers.[17] There is usually more or less tenderness to pressure over the eyeball but no actual pain.

The vascular engorgement now proceeds with moderate rapidity, so that at the end of eight or nine hours the eyelids, especially the lower, are markedly swollen, the conjunctiva of the tarsi is deep red, velvety, with flakes or strands of fibrino-purulent exudate on it. This exudate tends to pass toward the inner canthus and may be seen as a grayish-yellow mass filling up the angle and covering the caruncle (Figs. 6, 7 and 8). The engorgement of the vessels in the ocular conjunctiva is marked. A network of tortuous arteries is seen, with fiery red ecchymotic conjunctiva in the meshes. Lachrymation, photophobia and tenderness over the eyeball are increased. These may be annoying to the patient. There is frequently a sensation of a foreign body in the eye. It is variously described as grains of sand, cinder in the eye, an eyelash turned in, etc. The burning and smarting along the edges of the lids become marked. Frequently there is itching and a desire to rub the eye. If this is allowed the reaction is often prolonged and severe. In children, especially where the rubbing can hardly be prevented, we have noted intense congestion of the conjunctiva, marked edema of the lids, chemosis and a large amount of mucopurulent exudate. We think that the fact that patients frequently rub their eyes may account for some of the very intense forms of reaction as described by various French observers, although it may not be the only factor in their production.

The reaction reaches its acme in from eight to fourteen hours. There are frequent variations in either direction. If the instillations are given at night the increased lachrymation, the mucopurulent exudate, together with the increased Meibomian secretion, may cause marked matting together of the eyelashes and gluing together of the lids. In these cases it has seemed to us that occasionally a slight reaction has appeared at the inner canthus of the opposite eye. In the majority of instances the disagreeable features of even rather intense reactions have passed after twenty-four hours. Sometimes the photophobia, the increased lachrymation, the exudate, the smarting along the margins of the lids and at the inner canthus, with ocular tenderness, persist for several days if no means are taken to counteract them (see below). This is not characteristic, however. At the third or fourth day there usually remains but slight congestion of the conjunctivæ, slight ocular tenderness and a tendency to increased lachrymation. The evidences of the pre-existing vascular engorgement may persist, however, for several weeks after the active reaction has disappeared. In these cases the conjunctiva over the eyeball is discolored a dirty brownish red (Fig. 14).

There are numerous departures from this rather gen-

erally described reaction. Sometimes the conjunctivitis, even in tuberculous individuals with bacilli, is very fleeting, the entire reaction appearing and disappearing within one day. In these cases one frequently doubts whether or not all of the instilled tuberculin has been retained. It is a very easy matter for some of it to be winked out or even purposely wiped out by the patient after the doctor has left. In these cases especially we would urge the necessity for further instillation under more favorable conditions, with very early examination after the instillation.

It is not too often to examine such patients, in a good light, once every hour. The non-instilled eye should be used as a control. The eyeball should be rotated successively upward, outward and inward as far as possible. Every portion of the conjunctiva is thus brought into view and compared with that of the non-instilled eye.

There are cases which show "delayed" reaction. In these also the possibility of some of the instilled tuberculin escaping should be considered. One might explain the retarded reactions, as well as the early, intense reactions, by consideration of the phase of the patient's resistance. Opsonic investigations have shown us that in tuberculosis this is especially apt to fluctuate. If at the time of instillation the patient happened to be in the positive phase an immediate reaction might be expected to follow. In support of this we would mention the case of a middle-aged man, with rather well-advanced pulmonary tuberculosis, who entered the hospital with a temperature of 103 F. There were great numbers of bacilli in his sputum and large clumps of elastic tissue. He reacted very promptly to the tuberculin instillation. Again, if the patients were entering the negative phase, this might be made more pronounced by the first instillation of tuberculin, but probably the ensuing positive phase, which supervened twenty-four or more hours later, might be more marked. This fact might account for some of the delayed intense reactions.

There are in our series six cases in which the response to the first instillation of tuberculin was either delayed or but slightly apparent. These cases, clinically, were: Spinal caries (2); old tuberculous hip-joint; hip-joint disease with discharging sinus; one old, non-active pulmonary tuberculosis, and one apparently active, apical pulmonary involvement. Five of these cases responded typically to the second instillation, while a third instillation was necessary to produce a distinct reaction in the apparently active pulmonary case (Figs. 9, 10, 11). The reaction was severe, prolonged for more than one week, and accompanied by malaise, severe headaches and ocular tenderness. This case might illustrate the failure to respond or the less degree of response that may follow when the instillations are successively in the negative phase. It can be supposed that the last instillation was in the positive phase, as shown by the prompt and pronounced reaction.

In the six cases cited above, had but one instillation been made, the nature of the pathologic process might easily have been passed over or the clinical facts might have thrown discredit on the value of the ophthalmic reaction. Similar experience is quite possible with the subcutaneous injection of tuberculin. It is a matter of common knowledge that 5 or 10 mgs. of tuberculin (TA.) frequently bring on reactions where the injection of 1 mg. has failed. Consequently, although we grant that the evidence we have to present is rather scant, it seems to us that while a prompt reaction in a suspected case might be taken as positive evidence of the existence of tuberculous foci, yet the failure to obtain such at the first instillation can not be held as evidence that the patient is non-tuberculous. If a positive reaction should not appear after from two to five instillations, administered several days apart, then one might be justified in holding that the subject were non-tuberculous. We hope to be able to furnish more complete information on this point when our experience with the reaction has been greater.

Pre-existing conjunctivitis does not appear to exert any marked influence on the reaction in tuberculous or non-tuberculous individuals. Quite a few of our cases have shown conjunctival injection before instillation. We have not noted that the tuberculin aggravated it. Of course, in such cases it is absolutely essential that the conjunctivæ of both eyes be examined before and after the instillations. Aubaret and Magne,[15] in some interesting experiments with aged subjects having chronic, hyperemic conditions of the conjunctivæ, but clinically non-tuberculous, found no change following the instillation of the tuberculin, even when the dose was repeated every two hours until four drops had been given. In all suspicious cases it has seemed to us to be good practice either to wait until the conjunctivæ were clear or to repeat the instillations. We have observed, in some cases presenting conjunctival injection at the time of instillation, that the subjective sensations, e. g., increased ocular tenderness, smarting at the lid margins and the inner canthus, have been absent in non-tuberculous individuals. This fact might occasionally be of value in differential diagnosis. In our experience we have found no cases in which the conjunctivæ seemed predisposed to inflammatory change, and appeared to react independently of any tuberculous foci. Such condition might, however, be possible.

It will be noted that eight of our cases which were clinically diagnosed as tuberculous failed to react. One of the cases occurred in a middle-aged woman, who a year before had very active processes in both apices, with numerous bacilli in her sputum. She has lived out of doors for ten months, has gained thirty pounds in weight, has no sputum and no active signs in her apices. We did not have an opportunity to instill tuberculin a second time in this case, and consequently are not able to state that the condition is such that she would not react. From experience with other similar cases we would venture to say that a positive reaction in this case is possible. The one instillation that the patient received may have been given in the negative phase and thus aggravated it. Should we chance to instil in the positive phase it seems likely that a moderately severe reaction would follow.

Our series shows that ten cases clinically non-tuberculous gave positive reactions and to the first instillation. Two of the reactions were fairly pronounced. Of these one case showed incipient infiltration in both apices; the other was a young man with a clinical diagnosis of chronic meningitis, probably syphilitic. There was no specific history, however, nor had the case improved under specific medication. No active signs were discoverable in the lungs. In the remaining eight cases no tuberculous foci were discovered. This, however, does not prove that such did not exist somewhere in the patients' bodies. As has already been stated, walled off or even active tuberculous foci are so common an experience at autopsy that in those cases reacting we have felt justified in regarding them as suspicious. In cases

similar to these the hidden focus should be searched for with all diligence.

Experience with the hypodermatic use of tuberculin (TA.) for diagnostic purposes has occasionally shown that reactions may occur in cases of syphilis, actinomycosis and leprosy. This fact has been adduced to support the theory that the tuberculin reaction is a "group reaction." Our table herewith presented in detail (Table 2) shows six cases clinically diagnosed syphilitic. Two of them reacted, one very slightly. The first case was one of tertiary syphilis with a large retroperitoneal tumor, the pathologic nature of which could not be determined. The other was the case of chronic meningitis mentioned above. It will be seen that in neither of the cases which reacted positively was the diagnosis of syphilis alone possible. Whether the reaction was a manifestation of the "group reaction" or whether there were in both of these cases hidden tuberculous foci we are not prepared to state.

The possibility of securing positive reactions in patients clinically tuberculous who are under treatment with tuberculin preparations must be considered. Dumarest and Arloing[17] mention seven patients who had been treated with tuberculin for five weeks. In all but one instance there were definite reactions. They do not mention whether or not repeated instillations were tried in the case which failed to react. It may be that the ophthalmic reaction was delayed on account of being sought for when the patient was in a "negative phase." We have observed in four instances—one case of pulmonary tuberculosis without bacilli, one of rather general tuberculous adenitis, one of tuberculous meningitis and one of cystitis—where the reaction was promptly brought out after the subcutaneous injection of tuberculin (Figs. 2, 12, 13). One of us was able to produce a very slight ophthalmic reaction in himeslf by the subcutaneous injection of 1 mg. of tuberculin, after a previous instillation of tuberculin in the conjunctival sac had failed to give a positive reaction. We attempt to give an explanation of these phenomena below.

Febrile Disturbances: In none of our positive cases were we able to detect a rise in temperature that could be attributed to the instillations. This seems to be the general experience. Dumarest and Arloing,[17] however, exhibit charts of four patients in which rises of temperature varying from .6 to 2 degrees C. are shown. The temperatures were taken per rectum. Evidence is not furnished showing that these variations were more than normal for the cases presented. Further information on this point is awaited with interest. We rather lean to the view that in picked cases—particularly cases which have had several instillations—variations in temperature are possible.

Constitutional Disturbances: These have not been marked in any of our series. In some of the rather pronounced reactions the local discomfort, together with the headache, perhaps resulting from the interference with vision, have been rather annoying but never really unbearable. In one instance of pulmonary tuberculosis where the reaction was pronounced after the third instillation, sharp, shooting pains to the side of the head and through to the back of the head were complained of. Local pain at the site of the tuberculous focus has not been complained of, as frequently happens when tuberculin is administered subcutaneously. Malaise has been noted in seven cases. Nausea or anorexia have not been observed. None of our patients has complained of joint or muscle pains or soreness. Nausea and vomiting, with prolonged indigestion, have been reported by some workers.[17]

Treatment of Conjunctivitis Brought on by Instillations: In the majority of our cases we have not deemed such treatment necessary. The discomfort usually disappeared after twenty-four hours. In private practice, however, we can easily see where active treatment of the conjunctivitis might be desirable. Simple eye washes, such as warm normal salt or boric acid solutions, usually suffice. We have used adrenalin solution, 1/5000 in a few cases, as suggested by Dumarest and Arloing.[17] In all cases where it has been used there has been marked improvement in the subjective symptoms, although we have not noted that the congestion diminished noticeably or permanently. Stronger solutions of adrenalin would undoubtedly lessen the congestion, but if they are used in too great strength an inflammatory reaction more pronounced than the first may result. Adrenalin and cocain solutions may be used where there is much congestion, with great discomfort. A few drops may safely be instilled every two or three hours. The symptoms of cocain poisoning must be watched for. Where there is marked swelling of the eyelids an ointment containing cocain and adrenalin has been recommended.[17] We have had no experience with it. Iced pledgets of gauze or small icebags are doubtless as efficient but rather more inconvenient.

The Cause of the Ophthalmic Reaction: In the literature we have not been able to discover any satisfactory explanation of the phenomena observed in tuberculous individuals. The theory of "anaphylaxis" or "hypersusceptibility," as elaborated by Vaughan and Wheeler[19] and by Rosenau and Anderson[20] does not appear to us to explain completely all the phenomena of the ophthalmic reaction. For the purpose of determining whether or not individuals who had failed to react to instilled tuberculin at the first trial would react when such instillations were made ten or more days afterward, we selected ten cases for second instillation. These were carefully observed for evidence of ocular change. None of them reacted positively. Four of the cases were instilled for a third time twenty days after the first instillations. None of them reacted positively. Our Table 2 herewith, shows a considerable number of cases where failure to secure positive reaction in tuberculous individuals at the first instillation was followed by prompt positive reaction when the instillations were made from two to six days after the first instillations. We venture to call attention to the following facts:

In the reaction as described by others and in this paper there are certain common observations:

A—1. A local reaction of an inflammatory nature follows the instillation of tuberculin (dead cell bodies, or fragments of such, of the tubercle bacillus) into the eyes of tuberculous individuals. No such reaction follows in normal persons or in people suffering from diseases not tuberculous.

2. In cachectic, moribund or very advanced cases of pulmonary tuberculosis, with cavities or general involvement, no ocular reaction may occur. This is also the case in acute miliary tuberculosis.

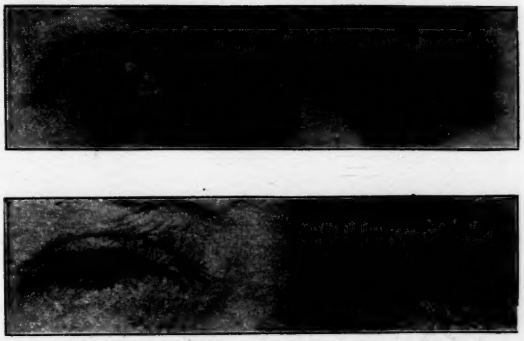
3. When cases of acute miliary tuberculosis are instilled and are later injected with tuberculin subcutaneously, the ocular reaction may appear a few hours after the injection. Possibly moribund and advanced cases react similarly. It has also been observed by previous workers and ourselves that ordinary cases of tuberculosis which have given the ocular reaction have

either an aggravation or at least a return of the ocular symptoms following the subcutaneous injection of tuberculin. As mentioned above, this phenomena has been noted in one of us, clinically non-tuberculous, following the injection of 1 mg. of tuberculin subcutaneously.

It is evident that any theory of the mechanism of the ophthalmic reaction must account for the above facts before it can be tenable.

B—1. When the tuberculin suspension (cell bodies or fragments of such as can be demonstrated by staining some of the dried, precipitated tuberculin, supplied in tablet form or bulk, with Wright's (Harvard) stain or carbol fuchsin) is instilled into the conjunctival sac, it may be assumed from the histologic construction of the eye and its appendages that any soluble products are readily absorbed and that such cell bodies or fragments of such as are contained in the suspension are mechanically retained in the loose conjunctival tissues, after the fashion of bacteria held by a cotton filter.

2. Following this, something happens in tuberculous individuals which is missing in others, namely, inflam-



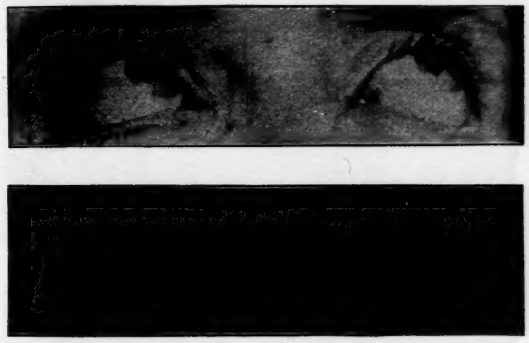
Figs. 1 and 2.—Exterior of eye in a moderate and an intense reaction respectively. (Both patients instilled in the right eye.) Note narrowing of palpebral aperture, swelling of lids and evidences of increased lachrymation.

Fig. 3.—Early, mild reaction in a child. Note conjunctival injection, swelling of lower lid and caruncle. (Case of old, tuberculous hip-joint disease.)

mation. There must, therefore, be in these tuberculous individuals at the time of instillation (or all the time?), or as the result of the instillation, some body or bodies which, co-acting with the instilled tuberculin (cell bodies or fragments of such) gives rise to a product—a toxin (?)—which is able to cause local inflammation. Or in such patients some normal body may be missing at the time of instillation of the tuberculin, the absence of which allows some products of the tuberculin to cause inflammatory reaction, inhibited by such body present in the normal tissue. In any case this co-acting *present body* or *inhibiting absent* body must owe its presence or its absence ultimately to the difference between the tuberculous patient and the non-tuberculous patient, namely, the tuberculous lesion, wherever it may be placed.

3. In the present mode of conducting the ophthalmic reaction one drop of a 1 per cent. suspension of tuberculin (dried, dead cell bodies or fragments of such) is instilled into the conjunctival sac. The dose is approximately $\frac{2}{3}$ mg., much of which may be entirely ineffective. However, we know that the subcutaneous injection of as little as 1/1000 mg. of tuberculin is sufficient in many patients to cause a definite rise in the opsonic index of the patient's serum for the tubercle bacillus. It would appear that out of the $\frac{2}{3}$ mg. instilled quite sufficient might be absorbed to bring about the production of protective antibodies. Now, if among these were lysins or opsonins, or both, these, by acting on the bacillary bodies enmeshed in the soft tissues of the conjunctivæ, as the result of the instillation, might liberate from such cell bodies endotoxin quite capable of producing effects on the conjunctival vessels leading to the local, inflammatory change described as the ophthalmic reaction. It may be that chemical groups, as well as cell bodies, through the action of antibodies, are capable of being changed into toxic ones.

4. Considering the above facts to be true, we are still without an explanation of why this succession of phenomena is lacking in non-tuberculous individuals. It has been stated by some observers that very much smaller doses of tuberculin suffice to cause rises in the opsonic power (i. e., protective body in general) in tu-

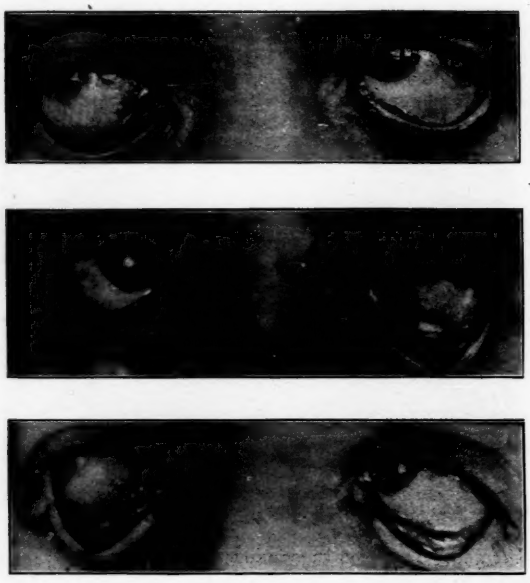


Figs. 4 and 5.—Early stage of reaction in case of pulmonary tuberculosis. (Right eye instilled.)

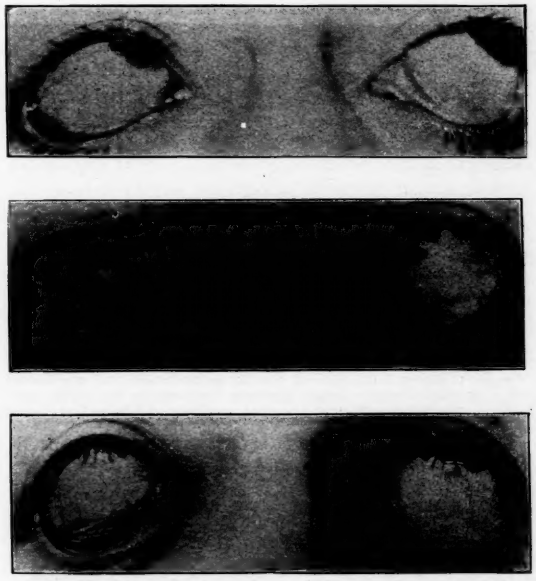
berculous than non-tuberculous individuals.[16] It appears to us, then, quite probable that very gradually or periodically escaping products of bacterial growth from the tuberculous focus might so increase the specific irritability of those cells which form immune bodies, that a comparatively small stimulus would be sufficient to cause them to react, with the formation of immune bodies—a stimulus which in the normal individual is wholly inefficient. One of us (Walker) has noticed, with other observers, that repeated injections of staphylococcus cause a more and more rapid response in the opsonic rise and a correspondingly more rapid fall, in individuals infected with staphylococcus. It seems that the above facts indicate an increase in the specific irritability of the cells concerned with the production of immune bodies such as are referred to above.

5. There is still to be explained why it is not customary to obtain the ophthalmic reaction in cases of acute miliary tuberculosis or in tuberculous patients who are moribund. It is well known that in such cases the bacilli are not walled off from the general circulation, but may frequently be cultivated from the blood. Lysins and opsonins, formed as the result of the instil-

lation of tuberculin (these lysins and opsonins probably being in small amount), are seized on by the bacilli in the general circulation, leaving none or little to combine with the bacilli or the fragments of such enmeshed in the conjunctiva. As a consequence, the endotoxin is not released locally, and as a result no locally manifested inflammatory reaction follows. It may be advanced that when in such cases hypodermatic injection of tuberculin follows instillation, the much larger quantity of lysins, opsonins, etc., resulting from the large dose (1 to 10 mgs.), all of which is effective, may produce antibodies sufficiently in excess to react with the bacteria in the conjunctiva as well as those in the blood stream or loosely separated from it. Our tabulations, herewith, show a case in point. The patient was a young man with acute, miliary tuberculosis. He was practically moribund when admitted to the hospital. There was no reaction to the instillation of one drop of tuberculin into his conjunctival sac. Four days later he was given 1 mg. of tuberculin (TA.) subcutaneously.



Figs. 6, 7 and 8.—Early stages (day one and two) of a moderately severe reaction. Note swelling of lids, turgescence of palpebral conjunctivae and caruncles, injection of ocular conjunctivæ, muco-purulent exudate. (Case of old tuberculous hip-joint disease, with reaction to second instillation, two days after first.)



Figs. 9, 10 and 11.—Reaction in case of second instillation in patient with old apical pulmonary tuberculosis. Fig. 11 shows condition of eyes after four days had elapsed. (Note evidence of previous conjunctivitis.)

A prompt ophthalmic reaction of moderate degree appeared.

How does our hypothesis fit the phenomena occurring when ordinary hypodermatic injections of tuberculin are used for diagnostic purposes? In early cases of tuberculosis we are dealing with lesions fairly well walled off from the general circulation by practically avascular walls—local processes in which the "bacteriotropic pressure," so-called, is low. Through these walls the protective bodies pass slowly and with difficulty. The injection of one milligram of tuberculin in these cases may be insufficient to raise the amount of protective bodies in the blood enough to sensibly alter the condition within the local focus; but, as the subcutaneous dose of tuberculin is increased, lysins, opsonins, etc., finally penetrate in sufficiently large quantities to break up the bacilli at the local focus and liberate their endotoxin. The well observed local inflammatory change then follows with febrile and constitutional disturbances.

Our hypothesis is, then: That the inflammatory changes in the eyes of tuberculous individuals following the instillation of tuberculin suspensions is due to the slight stimulation of the hypersensitive cells forming protective, substances with the production of an excess of antibodies. These antibodies so produced, by acting on the tubercle bacilli or fragments of such enmeshed in the conjunctiva, liberate endotoxins which are capable of producing the inflammatory changes commonly observed.

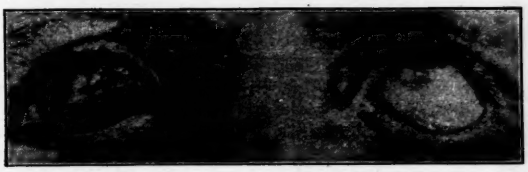
If this hypothesis be true the explanation for the occurrence of ophthalmic reactions in general, especially in typhoid fever, where we deal with a bacillus with well known endotoxic properties, is clear. The same hypothesis makes evident the phenomena occurring when tuberculin is applied to the abraded skin ("cutaneous reaction" of von Pirquet). It also seems possible that any of these reactions might be produced artificially in animals or individuals not specifically infected by the injection of appropriate bacteria or their products of growth or both in sufficient quantities. We expect to give evidence on this point in a later paper.

CONCLUSIONS.

From the results of our work herein described we are convinced that the ophthalmic reaction as directed to be practiced by Calmette and others is of undoubted service in the diagnosis of tuberculosis. In no case where its worth could be tested clinically by the finding of tubercle bacilli did we fail to obtain decided ocular manifestations following the instillation of the tuberculin. This reaction did not follow when instillations were made in the case of 126 individuals affected with diseases other than tuberculosis. It was not obtained in 74 apparently normal adults.

A proper technic for administration is necessary for the success of the reaction. Whether or not smaller dosage would produce recognizable effects is not at present fully decided. Reactions have, however, been obtained when suspensions of 0.5 per cent. were used.[18]

When positive reaction follows promptly on the first instillation it appears that the diagnosis of tuberculosis is reasonably certain. The fact that a reaction thus appears does not mean that the subject is affected with an active tuberculous process, although the evidence is strongly in favor of such. Presupposing this might, in some instances, lead to unnecessary alarm and much inconvenience. The ophthalmic reaction, as is the case with every form of tuberculin test, must be accompanied by complete examination of the suspected focus in order to be judged properly. All suspicious cases which fail to respond to one instillation should be reinstilled from



Figs. 12 and 13.—Very intense reaction in case of incipient pulmonary tuberculosis, following previous subcutaneous injection of 1 mg. of TA, when patient had failed to react to one instillation of tuberculin into the conjunctival sac. In this case the constitutional and febrile disturbances were prolonged for more than two days. Note the marked injection of the conjunctivæ, the swelling of the caruncles, the evidences of increased lachrymation and photophobia.

Fig. 14.—Same patient as in Figs. 4 and 5, showing appearance of conjunctiva at the end of ten days, following a moderately severe reaction. (Right eye had been instilled.)

two to five times and careful examinations, local and general, made after each instillation.

Too little work has as yet been done to allow conclusions to be drawn regarding the relative value of the ophthalmic reaction the subcutaneous or the skin reactions to tuberculin.[13] In seven of our cases in which both the subcutaneous and ophthalmic reactions had been tried positive evidence was furnished in each case. We have had no experience with the cutaneous reaction. None of the reactions take the place of thorough examination of the patient, from every viewpoint. They are all confirmatory. Properly administered, we believe that the accumulation of more data will show that the ophthalmic reaction is quite as valuable to the general practitioner as are any of the others. Its convenience and rapidity of action certainly commend it.

In the preparation of this paper we are deeply indebted to many. The courtesy of Professors de Nancrede, Peterson, Canfield, Barrett, Cowie and Camp in allowing the tests to be carried on in their wards has been greatly appreciated. Our thanks are especially due Professor Dock for his encouragement and his suggestions. Dr. Van Zwaluenberg has been of much help in the dispensary. Without the aid of the medical house officers, Messrs. Sample, Marshall, Collins and Owen, the work could scarcely have been possible. The excellent photographs prepared by Mr. A. A. Hale testify in their own behalf. We have been greatly helped by his patience and skill.

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SOME RESULTS FROM ORTHODONTIA ON THE DECIDUOUS TEETH.*

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The Italian criminologists, Lombroso and Ferri, find that the adult criminal is far more crooked in body than the honest man. Victor Hugo in "Les Miserables" has depicted the same idea. The inhabitants of any modern city exhibit defective countenances, not at all like the beautiful faces of ancient Greece. Most of these defective countenances reveal their greatest defects between the eyes and the chin, and these defects involve the dental arches. If they involve the dental arches they are pretty sure to involve the nasal passages and the bones immediately above.

On the proper formation of the palatine arch and the various sinuses depends the resonance and carrying qualities of the voice, and on the accurate formation of the dental arches and the correct occlusion of the teeth depend the power of clear and distinct enunciation and the power of thorough mastication, which means insalivation. This is the first step in the digestive process so important to the health and strength of the individual. It has only recently become known that impending defects of the kinds here mentioned may be discovered in early childhood and may be remedied while the bones are in a formative state and the teeth are in process of development.

It is altogether probable that the same causes which produce contracted dental arches produce adenoid vegetations. Dr. Tom F. Pedley of Rangoon, Burmah, India, published[1] and article entitled "The Rubber Teat

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907. The article is abbreviated here by omission of the case reports and part of the illustrations, but the complete article appears in the author's reprints.

1. Brit. Med. Jour., Oct. 20, 1906.

and Deformities of the Jaws," in which he accredited the rubber teat and "baby comforter" with "giving rise to certain deformities of the jaw, irregularities of

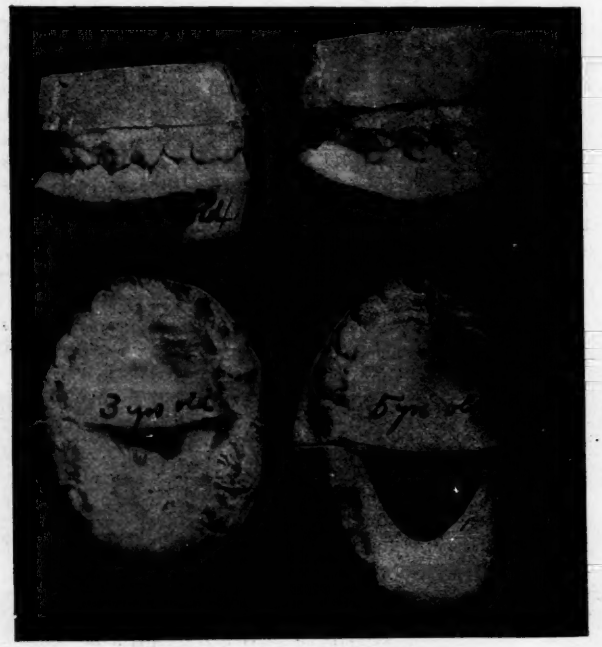

Fig. 1.—The four models show normal or nearly normal sets of children's teeth at the ages of 3 and 5 years, respectively. At 3 years of age the teeth are close together and in fine arches; at 5 years they are beginning to separate and the arches are breaking.

the teeth, nasal obstructions and other diseases in infancy and childhood." He published cuts of nineteen deformities occurring in his own practice, attributed by him to these causes.

If the dental arches are contracted or not sufficiently extended, there is not room for all the teeth to occupy their proper positions, so some are crowded out of place and stand irregularly. If lymphoid vegetations occur in very early life—and they are apt to occur at any time from the third month to the twelfth year—they naturally would produce a cessation of lateral growth and a disturbance in the arrangement of the temporary teeth, as well as a cessation in the development of the alveolus pertaining to the permanent teeth.

We need to be able to recognize the dental arches in their highest state of health and efficiency, and that means normality. What constitutes that condition has only recently been discovered, and while it is true that the dental apparatus of man viewed as an instrument for mastication, is a bit of mechanism far more complicated than a watch, it has been and is to-day regarded by the great proportion of men practicing dentistry as something from which one or more of its members may be abstracted without serious harm.

No wonder then that the medical world as a whole has failed to recognize that one member taken from this arch not only impairs for life the efficiency of the entire masticatory apparatus, but that it diminishes the nasal passages and alters the relation of the two sides of the face. Should this mutilation occur early enough it may cause a change in the level of the eyes, leaving one of them defective, it never having reached its full contour. Every effort should be made, therefore, to promote a normal development, and if abnormality is found, to correct it at the earliest suitable age.

The adult human teeth are adapted to the size of the individual in whose mouth they occur, and there is a certain definite arrangement whereby the upper and lower arches articulate with each other. This arrangement gives exactly the room for the entire arches of teeth to be completed, the lower teeth being just within the circle of the upper, which condition is brought about by the lower incisors being narrower than the upper incisors, and the principal lower molars possessing five cusps while the upper molars have but four. The deciduous teeth of the child are subject to the same general arrangement as the adult teeth, and one who has carefully studied the adult teeth can readily detect irregularities in the positions of the deciduous teeth.

If irregularities are found among deciduous teeth, irregularities of the same nature, but still more pronounced, may always be expected in the permanent teeth which are to follow these deciduous teeth. If no perceptible irregularities of the de-

Fig. 2.—The four models show very irregular teeth at 4 and 5 years, respectively. This would result in marked deformity of the permanent teeth, the nasal passages, and the entire facial outlines.

ciduous teeth exist, and at five and one-half or six years of age no separation of the deciduous incisors has taken place, we are certain that the development of the arch of permanent teeth has been arrested and that there will be irregularity of the front teeth, because the permanent teeth, being larger than the deciduous teeth, need a larger arch in which to erupt. If there is no spreading apart of the deciduous teeth to form that larger arch then the permanent teeth must inevitably be crowded and jumbled whenever they make their appearance through the gum, and that is an indication of nasal stenosis; this in its turn is an indication of lack in power to develop (Figs. 1 and 2).

A child should not be called on to do more than one thing at a time; the conservation of energy in every direction is to be desired; therefore, it is not wise to attempt to place on any child the burden of overcoming unaided the conditions just described, of insufficient air spaces, accompanied by insufficient room for dental development. Teeth, if seriously irregular, can never regulate themselves, and noses insufficiently developed always lead to worse evils as time goes by.

Slight wire arches a little larger in circumference than the dental arches of the child should be placed on the undeveloped arches of deciduous teeth and be allowed to expand until the proper size of arch or even a trifle larger than is necessary for the normal development of the permanent teeth is procured. This operation should be entirely painless and should occupy but a few weeks in its accomplishment, but when completed it will be found that the nasal stenosis has at the same time been largely or altogether corrected, and that the growth of all that part of the face lying between the commissure of the lips and the eyes has been promoted. Breathing becomes easier, the mouth closes naturally in sleep, the tongue once more presses against the roof of the mouth, enlarging the dental and palatine arch and permitting the simultaneous development of upper and lower dental arches under the influence of the tongue, which is their natural guide.

63 West Forty-eighth Street.

THE MUTUAL DEVELOPMENT OF UPPER AIR TRACT, JAWS, TEETH AND FACE,

AND THEIR ECONOMIC IMPORTANCE TO THE HUMAN RACE.*

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Orthopedic surgery occupies an important and constantly widening position in the field of reconstruction and correction. The "dental orthopedist" has only just begun to attract attention, and orthopedics of the nose, one might say, has scarcely as yet come into existence; but there are indications that it will outstrip all other branches of corrective surgery, because it directly affects the whole organism and the mental capacity instead of the less important locomotor functions.

I will endeavor in this article to show the importance of the normal development of the upper air tract and teeth, the dangers following imperfect development, and, in so far as possible, the causes and means of prevention of developmental irregularities. As a primary postulate, one may state that the nose is the axis on which the structure of the face depends for its development and that any variation in this axis produces some pathologic result more or less evident to the individual as his general body development continues.

MOUTH BREATHING.

The first and most important in our series of pathologic events is mandatory mouth breathing, due primarily either to nasal obstruction or to habit mouth breathing, which results secondarily in nasal occlusion. Habit mouth breathing may follow acute mandatory mouth breathing, or may result from the habit of constant talking seen in some children, which requires them to have their mouths always open. Or, again, it may come from deficient muscular development of the jaws and mouth, dependent on artificial feeding, under which condition the child does not make proper use of these structures.

During mouth breathing the tongue does not rest firmly against the hard palate as it normally should, pressing against the alveolar arches, but lies loose in the mouth. The lateral thrust which the tongue exerts on the alveolar arches under normal conditions is lost, and the weight of the face and facial muscles tends to check the lateral developments of the superior maxillary bones

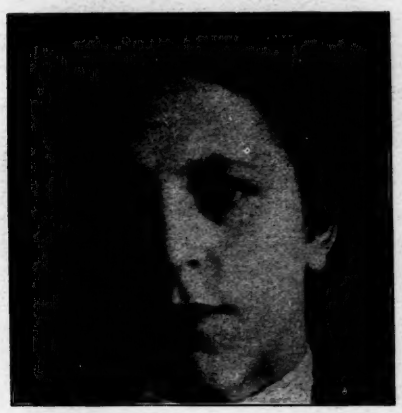

Fig.1.—A case of extreme nasal stenosis with nasal breathing. Prognathous type.

and dental arch proportionately to the antero-posterior development.

The superior maxillary bones contracted by abnormal development and conditions dependent on mouth breathing necessitate arrest of the development of the nasal fossæ chiefly in the horizontal plane on the transverse diameter, but also in the vertical plane. The nasal structure is especially susceptible to pathologic variations like all organs which are undergoing retrograde metamorphosis. The superior alveolar arch is contracted in proportion to the arrested development of the superior maxilla. The teeth, however, remain of normal size and number and must be crowded into a shorter line, forcing many out of position (Figs. 1, 2 and 3).

The results are of two varieties. The superior teeth are displaced forward, especially the incisors; or the superior teeth, the incisors especially, are locked behind the inferior, and the anterior displacement of the superior teeth is checked, forcing them into double alignment. The lower jaw meanwhile approaches more nearly its normal development, thus placing the upper incisor teeth in an abnormal position relative to the lower. The under set overlap the upper instead of being overlapped

* Read in the Section on Stomatology of the American Medical Association at the Fifty-eighth Annual Session, June, 1907.

by them. All of these malpositions and malformations combine to make an abnormally narrow dental arch and imperfect dental occlusion.

There are two forms of mouth breathing. The first is due to nasal occlusion and is characterized by the adenoid jaw or retreating chin, which recedes and falls behind the upper, and consequently the upper teeth lock in an anterior position in relation to the under, which are drawn downward and backward by muscular action in the efforts to keep the mouth open for breathing. If nasal breathing is regained in this form without dental regulation the pressure of the closed lips pushes the edges of the upper middle incisors backward and forms the "rabbit" mouth. The second form of mouth breathing is characterized by the prognathous or tonsil jaw. If there is faucial obstruction added to the mouth breathing from nasopharyngeal causes, the lower jaw is then drawn downward and forward by muscular action, in order to clear the mouth and fauces, and the lower jaw lies in an anterior position and the inferior incisors occupying an anterior position in relation to the upper, causing wapper-jaw.

Fig. 2.—Nasal occlusion with irregular teeth characterized by anterior displacement of the lower teeth. Prognathous and deficient development of the superior maxillæ.

Fig. 3.—Same as Fig. 2, showing prognathous type of mouth breather.

When the superior teeth are thus displaced it is impossible for natural development ever to overcome the deformity. With the irregularity of the teeth and the uneven bite, closure of the jaws can not give a firm muscular fulcrum or support which moral character seems curiously enough to require to make it steadfast. The teeth lock in whatever position they first meet. If they chance to be irregular at the start they lock in that position and no spontaneous regulation is possible.

FACIAL CONTOUR.

The contour of the face naturally does not come up to the hereditary standard when the superior maxillary bones are abnormally narrow and laterally contracted. The characteristics of this deformity, viz., sinking in of the superior maxillary area, narrowing of the nose, prominence of the lower jaw, or prominence of the superior incisors accompanied more or less by lateral and vertical asymmetry, with distortion of the profile due to the falling jaw and the defective contour of the nose, are too well known to require further comment. These facial changes result in deterioration of the expression below the racial or hereditary standard, giving the face a vacant or degenerate expression.

It is hard to estimate fully the economic importance of the misplacement of the teeth and the resultant changes in the upper air tract. They are summed up in lessened physical and mental capacity and resistance; that is to say, they fall below the normal phylogenetic standard.

Insufficiency in lung expansion and in blood oxygenation must necessarily accompany mouth breathing, because this condition requires a continued more or less conscious muscular effort to keep the buccal orifice and fauces clear enough to allow sufficient flow of air to supply not the wants but only just enough to maintain life. Consequently during sleep this supply must be more or less diminished to the detriment of the entire organism. The extreme diminution of the air supply is often accompanied by a very annoying (to others) vibration of some part of the mouth or soft palate.

Besides the insufficient quantity of the air supplied by mouth breathing, its quality is more impure and more definite in moisture and warmth than when the air is supplied through the nose. The most important defect in this respect is the greater number of bacteria reaching the fauces, thus causing increased frequency of local and general infection. Among the local infections we may place infection of the mouth, as shown by the greater prevalence of carious teeth in mouth breathing. The fauces are often affected, as is shown by inflammation of the faucial tonsils. In like manner the pharynx is affected, as shown by disease of Luschka's or the pharyngeal tonsil. In other words, the whole lymphoid ring may be involved. The lower air tract is also very likely to be infected, and there is a tendency to coryza, influenza, nasopharyngitis, tonsillitis, laryngitis, bron-

chitis and pneumonia. Among general infections are tuberculosis, diphtheria, the exanthemata, typhoid fever, cerebrospinal meningitis, and acute articular rheumatism resulting from toxemia consequent on infection of the lymphoid ring.

The normal nose sifts the inspired air of mechanical impurities which might cause local irritation. It also serves to check inspiration of irritant gases by warning the individual of their imminent danger. Those individuals who are unable to use the nasal safeguard are more subject to laryngeal, tracheal, bronchial and pulmonary irritation due to inspiration of mechanical or chemical irritants, dust, gases and too dry or too cold air. The English custom of wearing respirators is undoubtedly due to the prevalence of mouth breathing in that country.

Among the conditions dependent on a nose contracted by mouth breathing are defective ears, inducing disturbances, from subjective irritation, provocative of insanity, and deafness with a tendency to suppuration, mastoiditis, meningitis, infective phlebitis, cerebral and cerebellar abscess, pyemia, septicemia and death.

The imperfect development of the air sinuses of the head is another result of arrested growth. This causes impairment of vocal power and quality of voice, with a tendency to headache and sinusitis, which may develop later into meningitis, brain abscess, general sepsis and death.

Impairment or loss of smell is due usually to closure of the upper fossæ of the nose originating from imperfect development of these spaces consequent on mouth breathing, etc. By this loss the individual is deprived of much gustatory pleasure as well as olfactory, since the senses of taste and smell are so intimately associated. All taste may be lost except salt, sweet, sour and bitter, together with the esthetic enjoyment of pleasant odors. There is sometimes also a loss in sexual tone and activity. The unfortunate is exposed to ingestion of poisons or decayed articles of food, which should warn their consumer by their unaccustomed taste or smell.

Ocular defects often are caused or aggravated by intranasal complications and the asymmetry of the facial bones due to the nasal occlusion and irregular teeth.

Together with the imperfect development of the air sinuses and the nasal fossæ there is a tendency to pathologic contact of the surfaces of the mucosa of the nasal cavities and to intranasal pressure. This condition, on account of the cerebral congestion and abnormal irritation that follow, is an important exciting cause of mental inferiority, idiocy, epilepsy or insanity. The ear defects resulting, as we have stated, predisposes to deafness and deaf-mutism, and through their subjective mental irritation, or absence of normal mental stimuli, to insanity. The continuation of the condition producing this state causes a low grade of mental capacity, incapable of self-support, before the advanced states are reached.

Mastication is a most important economic factor for the more civilized portion of the human race. Its deterioration has been observed in Great Britain. Of late years it has displayed itself in the difficulty of securing recruits who had serviceable teeth for the army. Sound teeth for the proper preparation of coarse foods for easy digestion are a necessary requirement for the health and efficiency of an army. As we have previously stated, caries of the teeth is most common in mouth breathers. It can be prevented to a large extent by nasal breathing.

The normal potentiality of a strong jaw, or, in other words, of perfect dental occlusion is proverbial. We need not dwell on it because of its universal recognition. The character is weakened with a retreating chin. In the wapper-jaw type of dental irregularity there is more strength of character, because the jaw in this form is more amenable to muscular fixation.

ETIOLOGY.

The causes of this condition are nasal obstruction, mouth breathing and deficient and irregular development of the superior maxillary bones, probably due to the disturbance of the muscular balance normally furnished by the closed jaw for the greater part of twenty-four hours. Instead of this we have an unbalanced muscular tension and thrust working for the whole twenty-four hours. With the disturbance in the development of the maxillary bones come the irregularity of the teeth and the deficiency and irregularity of the nasal development and face as a whole. Any one of the factors may be the first to start the pathologic chain, but usually the nose is first to blame.

Prophylaxis of the vicious cycle of interdependent links calls attention to the nose and maintenance of nasal breathing from the time of birth.

PROGNOSIS.

For spontaneous cure of acute mouth breathing the prognosis is good and is improved by appropriate local and general medical treatment. The prognosis for chronic mandatory mouth breathing is absolutely bad without surgical intervention. With surgical and rhino-orthopedic and orthodontal assistance the prognosis is absolutely good before the twenty-fifth year; after that time it depends on the extent of the arrest in development.

As to dental occlusion and irregularity of the teeth, the prognosis is absolutely bad without orthodontia. With correction, success is assured at apparently any age.

TREATMENT.

The treatment varies with the period in the case at which it is first sought. Acute nasal occlusion in infancy simply requires the removal of the occluding mucus and the rest will take care of itself. Colds in the head are the form the occlusion usually takes. They require appropriate treatment. I have heard that the aborginal grandmothers of the Sandwich Islands were wont to suck clear the noses of their grandchildren. Nasal obstruction caused by adenoid vegetation requires surgical interference. Habit mouth breathing should be corrected before structural occlusion of the nose takes place; a piece of isinglass plaster across the closed lips is the best means of prevention.

After the first dentition is well under way, regulation of the teeth and widening of the arch may be found necessary in order to allow proper development of the alveolar process and perfect closure of the teeth requisite for normal nasal development. After the second dentition, dental correction is still more important for the same reasons.

The premature loss of any of the deciduous teeth is an important accident, because it interferes with the symmetrical development of the jaw and the regular eruption of the permanent teeth. Still more to be deplored is the loss of any of the permanent teeth from caries or other disease, because the absence of any of the teeth causes a corresponding shrinkage of the maxilla and irregularity of the remaining teeth—conditions very difficult to combat.

The restoration of the nose to normal capacity in infancy usually follows the removal of hypertrophied lymphoid tissue and local cleanliness. Whatever treatment is employed to make the nose patent, nasal breathing must be maintained in order to keep the nose clear. In childhood the lymphoid tissue requires removal; possibly the teeth will require regulation in order to foster the growth of the nasal fossæ which will follow such interference. In adolescence the same fact holds good as in childhood, with the addition that possibly nasal obstructions may require removal as well as regulation of the teeth, which at this time has become a necessity. Imperfect occlusion at any age demands orthodontal assistance, because Nature is never able to correct it.

The exact age at which the regulation of the teeth loses its orthopedic value in relation to the nose and ceases to affect the nasal fossæ has not been fairly determined, but it seems reasonable to suppose that up to 25 or possibly 30 years of age it is still useful. The removal of nasal obstructions is, of course, always indicated, but after the age when the dental correction no longer affects the nasal fossæ the only hope for restoration of nasal breathing is the complete removal of all the nasal obstruction. Although orthodontia no longer, at this advanced age, has a direct bearing on the nasal cavities, it still has some relative importance, for in order to maintain nasal breathing which has been surgically produced it is necessary to use the nose for respiration—a difficult task for an individual with irregular teeth and imperfect dental occlusion.

HYPOTHETICAL CASES.

CASE 1.—An infant, six weeks old, has coryza; the nose is occluded with mucus and engorged mucous membrane, conditions which yield readily to appropriate treatment. If this state of things is allowed to continue, the child soon becomes a mouth breather from necessity and will probably remain so if the primary nasal occlusion has lasted a few weeks. The anatomic or secondary occlusion of the nose will soon follow. If the nasal occlusion is removed before the habit of mouth breathing is established, there is no further disturbance.

CASE 2.—A child of three years, previously a nose breather "catches cold", has inflammation of the lymphoid ring. The nose is occluded by adenoids. His "cold" is more or less continuous for several months. During this time the child has acquired the habit of mouth breathing. If this condition continues, the superior maxillary bones will be small and irregular, the superior dental arch will be narrow, the nasal fossæ will remain small and become more irregular. When the second teeth arrive, if not before there will be marked dental irregularity, which, as we have said before, locks and prevents the final development of the superior maxillary bones. If the proper surgical treatment is early resorted to and then the habit of nasal breathing properly established, by artificial means if necessary, there is no further trouble unless some future accident befalls the patient.

CASE 3.—Same case as 2. The child has received no treatment sufficient to establish proper nasal breathing. When the second teeth begin to appear from the sixth year on, irregular dentition and contraction of the superior dental arch will be progressively marked. The nasal fossæ will be still narrower, while the irregularity increases. The nasal fossæ will not only be narrow, but will also be shallow and the vault of the palate will be proportionately high. This vaulting of the palatal roof of the mouth is in a sense a compensatory alteration in development, because it allows mouth breathing with less muscular effort, and, consequently, the supply of air is less deficient. The tongue in this condition forms the floor of the vaulted channel.

Should caries seriously impair the first dentition before the appearance of the second, it is a cause for contraction of the superior maxillæ and further irregularity of the teeth, the effect on the dental occlusion is much the same as in cases of chronic mouth breathing. The relative position of the sixth year molars will be interfered with and the bite will be proportionately defective. Supposing this is not the case and that the irregularity occurs in the anterior portion of the maxillæ, the tendency will be to thrust the superior incisors far forward. Intranasal examination of such a patient, besides the irregular narrowing or shallowing of the nasal fossæ, probably will show a deflection of the septum with a corresponding spur.

Treatment of these conditions is both nasal and dental. Removal of the adenoid obstructions is indicated, of course; also removal of nasal spurs. The deflections of the septum will take care of themselves, provided the superior dental arch is widened at a sufficiently early age, the dental occlusion is rectified, and the mouth allowed to close without voluntary efforts. If the dental arches are sufficiently spread, the nasal fossæ will spread also and the whole facial anatomy will fall into normal lines.

CASE 4.—From puberty on the treatment and its results will vary according to the age of the patient. At a later age if no treatment has been received, the adenoids will probably have disappeared, the defects of the nose and of the teeth alone remaining, and possibly the habit of nasal breathing established, in which case the prominent upper middle incisors will have been pushed backward forming the so-called "rabbit" mouth. If the patient is still sufficiently young for the superior maxillary bones to respond to widening of the dental arch, treatment is indicated as outlined in the previous condition; but if the age has advanced beyond this period, the only hope for remedying the breathing lies in operative reconstruction of the nasal cavities. The alignment of the teeth will no longer have direct effect on the cavities for the mutual interdependence of the nose and teeth gradually lessens and entirely ceases between the twenty-fifth and thirtieth years.

CONCLUSIONS.

It is of extreme importance to keep up infantile nasal breathing on account of the many untoward conditions which may follow its loss. The sooner the defect of mouth breathing is rectified the more simple its treatment and the better the results. The importance of nasal breathing is many fold; it is a safeguard against infection, an aid to proper physical and mental activity through a sufficient supply of oxygen, a requisite of moral strength, esthetic outlines, and a protection to the faculties of hearing, speech and smell. But, most important of all, it is fundamentally necessary to perfect oral occlusion and the power to masticate food.

The proper regulation of the teeth is an assistance to the proper development and subsequent function of the upper air tract, and is especially necessary for the perfect restoration of the nasal respiratory function between the fifth and twenty-fifth years.

The developmental relation of irregular teeth and cramped nasal passages is a reciprocal one. The course of treatment to pursue if nasal breathing can be maintained is to straighten the teeth first and operate on the nose later if necessary. If nasal breathing can not be maintained, operate on the air passage sufficiently to allow nasal breathing before regulating the teeth. Then regulate the teeth and, last of all, do the final work of the nose if any further operating is required.

I wish to thank Dr. E. A. Bogue and Dr. Frederick L. Stanton for many ideas and much help on the stomatologic part of this paper and Dr. Stanton for the loan of photographs.

DISCUSSION

ON PAPERS OF DRS. BOGUE AND BRYANT.

DR. WILLIAM H. POTTER, Boston, Mass., has been interested in a method of measuring the enlargement of the nasal cavity which is obtained by expanding the dental arch. He thinks

that the best way to determine nasal enlargement is to measure the distance between given portions of the inferior turbinate bones. Before measurements can be taken the mucous membrane covering the turbinates, which is congested in varying degrees, must be shrunk down to the bone.

DR. W. M. DAILEY, New York City, agreed with the ideas expressed in Dr. Bogue's paper. He has noticed a deformity of the deciduous teeth at 2½ and 5 years, causing a marked deformity of the arch. He called attention to the lack of development in the premaxillary bone in the case shown by Dr. Bogue, which had not developed anteriorly and laterally. The occlusion of the deciduous teeth in this case was not normal, for in the normal deciduous occlusion, the deciduous second molar dips down into the space between the deciduous molar, and the first permanent molar, and acts as a guide for the superior first molar to its normal eruption. The normal eruption of the permanent molar comes anteriorly and then posteriorly and the deciduous tooth in this case shows itself of great value and importance. Speaking on Dr. Bryant's paper Dr. Dailey called attention to the fact that there have been a great many points brought out at different times showing lack of mental development in children. The lack of physical development is due to dental defects, which bring about general defects, thereby interfering with the normal constitutional condition of the children. When these children have had these dental defects removed, there is likewise an improvement of the general condition. Another important point, he said, is the breathing. The breathing is due to the peculiar elevation or depression of the thorax, which, if improperly performed, does not allow a sufficient amount of lymph to enter the blood to produce a quality of blood that will offer the proper resistance to disease.

DR. C. A. HAWLEY, Columbus, Ohio, agreed with the others that the conditions shown in mouths with irregular teeth are those of arrest of development. If that is true, he said, and if the spreading of the arch will cause the development of the face of the child to resume its natural course, it will make a great change in the plan of treatment of these cases. It is a big step in advance. It was with some conception of that fact that Dr. Hawley started to measure teeth and tried the plan, even at the early age of 6 or 7 years; it was to gain some conception of the future denture that he started to measure teeth, to furnish, if possible, the means of knowing what the future denture should be.

DR. E. A. BOGUE, New York City, agreed with Dr. Hawley that just as soon as the public is made to appreciate the seriousness of the condition and that a remedy for it is at hand we may hope for a large advantage in the development of children, because we can remove obstructions and let Nature go on and do her work. As to Dr. Dailey's statement that the premaxillary was not developed properly, Dr. Bogue felt that Dr. Dailey either called attention to the wrong model, or else he was mistaken. He agreed with Dr. Dailey, however, that the premaxillary bone lacks in development. Dr. Mosier of Boston, he said, recently brought forward the results of his work for the last two or three years in regard to the development of the premaxillary bones, and when he had got through with his description of the process of development, Dr. Mosier had to acknowledge that he knew of no remedy that met with his approval for the diminution in the size of the nasal orifice, due, as he thought, to the non-development of the permanent teeth in the premaxillary bone. Dr. Bogue thought it was with a little surprise that Dr. Mosier found that dentists were slightly ahead of him, and that very slight mechanical assistance would have enabled him to get over that obstruction. In regard to deciduous teeth not being developed, Dr. Bogue stated that that is true. They do affect the development of the permanent teeth. Children have been called stupid when physical defects have prevented them from exercising their proper normal functions. Dr. Cronin, at the head of the health department examination of school children in New York City, sent out seventy-five physicians to make careful physical examinations of the children, and then to apply, so far as in their power now lies, means for correcting the physical defects that exist. The advantages from this work are almost incalculable. Dr. Bogue commented favorably on Dr. Bryant's remark that instability of character follows instability of dental articulation, and he followed that by saying that the upper jaw was subject to fixation.

DR. ROBERT T. OLIVER, West Point, N. Y., asked Dr. Bogue if he considers development of the jaw a specific factor in the establishment of individual character.

DR. BOGUE replied that he could not answer the question.

DR. W. SOHIER BRYANT, New York City, is convinced that the regulation of the teeth and at a very early age, is the most important step in surgery of the teeth, nose and face that has been developed of late years.

DR. BOGUE asked the gentlemen who are interested in orthodontia to fix some of these apparatuses in the mouths of feeble-minded children and report the results of expansion of the arches for this class of patients.

Special Article

TRAVEL NOTES FROM SOUTH AMERICA.

NICHOLAS SENN, M.D.
CHICAGO.

(*Continued from page 118.*)

XI. VERRUGA PERUANA: OROYA FEVER: CARRION'S DISEASE.

A strange disease, limited to a few of the valleys of the western slope of the Andes Mountains in Peru has had its origin there without ever having become epidemic. This disease has never been known to originate on the coast, notwithstanding that many cases have been brought down from the infected valleys to the hospitals of the coast cities for treatment. It is called Verruga Peruana, because the characteristic macroscopic, pathologic product makes its appearance in the form of warty indurations in the superficial layers of the skin and in the subserous and submucous loose connective tissue of the internal organs and the intermuscular spaces, and because it has never been known to originate in any other country but Peru. It is called Oroya fever, because it has prevailed most frequently and extensively along the line of the Oroya Railroad, where one of the high bridges is called the Verruga Bridge, as it is in a locality notorious for the frequency with which this disease is encountered, so much so that laborers refuse to work there unless they receive double wages. It is finally called Carrion's disease, in honor of Daniel A. Carrion, a medical student of the University of Lima, who, in 1885, inoculated himself with the disease, in order to throw more light on its nature and clinical manifestations, and who, after a brave fight for his life, died Oct. 6, 1885, having sacrificed his youthful and promising life on the altar of science and in the interest of suffering humanity.

The true nature of this strange disease remains a secret to-day. The facts concerning it, as far as they have been revealed up to the year 1898, have been recorded in a masterly manner by Prof. Ernesto Odriozola of the Faculty of Medicine of Lima, in a monograph of 217 pages, entitled "La Maladie de Carrion, ou la Verruga Péruvienne," published in Paris in 1898.

Through the courtesy of Dr. A. L. Barton of Lima and Dr. W. M. Wightman of the Public Health and Marine-Hospital Service, I was given an opportunity to see three cases of this disease in the Guadalupe Hospital at Callao. The first patient was a Peruvian strongly tinctured with Indian blood, who was born and had always lived in one of the mountain valleys where the disease prevails. He was a laborer, about 35 years of age, who was always well until three months ago, when he was taken ill with symptoms indicative of verruga. He was admitted into the hospital the day before, in a very critical condition. His temperature was 40 C.; mind wandering; pulse small and frequent; tongue dry and coated. The face, arms, hands, fingers, legs, feet and toes on extensor sides, and chest and abdomen were covered with a papillomatous eruption, the papillæ being on an average about the size of a pea. These

papillomatous or warty growths were covered with a smooth, shiny skin, felt firm to the touch, and were surrounded by healthy skin. They were most numerous on the dorsal side of the arms and hands. The liver and spleen did not appear to be enlarged. One of these growths involved the outer canthus of the left eye. The deep lymphatics were not enlarged.

From the location of the swellings, their depth and appearance, it seemed to me that they had their starting point in the superficial lymphatic vessels. In the severer cases, these papillomatous growths become the center of a larger swelling, which gradually increases in size, ruptures and exposes a very vascular granulomatous mass, which bleeds readily on the slightest touch. Such a swelling is now forming in this case, on the outer aspect of the right arm about half way between the shoulder and elbow. Patient, and even physicians, sometimes ligate the bases of such swellings with horsehair with a view of strangling the growth. The general condition of the patient was very grave, as the symptoms of sepsis had become progressive.

The other two patients were convalescing from the same disease. The eruption had disappeared by absorption of the warty growths, leaving a mottled appearance of the skin. One of these patients had been in the hospital for three months, and both of them were emaciated and extremely anemic. The disease is noted for its chronicity in the milder forms, and for its great fatality if the eruption fails to appear. I was shown pathologic specimens, showing the character of the eruption when it attacks internal organs. In one of these I counted five subserous nodules of the heart, and in another, the mucosa of the intestine was studded with miliary nodules. I was informed that the appearance of the eruption, after the first symptoms of the disease have shown themselves, is very variable, ranging from a few days to a week or more.

Fig. 42.—Miliary verruga.

Fig. 43.—Miliary verruga.

I will now give a brief résumé of Professor Odriozola's book on this subject. When the Spaniards, commanded by Pizarro debarked and took possession of Peru, they soon became afflicted with, to them, a very strange disease. The writers of that epoch have left us descriptions of the disease, which correspond with what is now known as Carrion's disease. The grandfather of Professor Odriozola, a very learned man, was the first to collect extremely important documents of the history of verruga.

One of the very first descriptions of this disease is by Herrera in his book, "Descripcion de las Indies Occidentales del Cronista Mayor del Rey." 2 Ed. de 1730, Madrid. From the very accurate description given of the leading clinical features of what he calls "berrugas," there can be but little doubt of the identity of the two affections. A very thorough historical account of the writings by different authors make up the historical part of the book, which covers 23 pages. Among the authors mentioned appear the names of Agustin de Zarate (1749), Cosme Bueno (1764), Pedro Pizarro (1884), Gomara, Garcilazo, Oviedo and Cieza, Quintana, Lorente (1861), Chaix, Cappa (1886), Cevallos, Hippolyet, Unanue (1815), Tschudi (1852), N. Malo (1852), Archibald Smith (1858), Manuel Odriozola (1858), Salazar (1858), Armando Velez (1861), Raimondi (1874), Dounon (1871), Espinal (1872), Pancorvo (1875), La Puente (1875), Fuentes, Barrios, Kiney, Ch. Tasset (1872), Thomas Hutchinson (1873), Puelma Tupper (1877), Bordier (1884), Nielly (1881), Sanfurgo (1885), Avendaño (1885), Mariano Alcedan (1874), Carlo Cucca (1886), Vicente Izquierdo (1885), David Matto (1886), Larrea y Quezada (1887), José a de los Rios (1888), Ricardo Quiroga y Meña (1889), Julian Arce (1889), Damaso D. Antunez (1890), Gonzales Olaelchea (1890), Alfredo Leon (1891), Bello (1893), and Beaumanoir (1885). This long list of distinguished physicians, most of them Peruvians, shows how much interest this disease has created in Peru, and how diligently the profession has been endeavoring to throw light on its obscurity.

As to its cause, theories have been built up and torn down by the different authors, and it is safe to make the statement that in spite of so much speculation and writing, its real nature is almost as dark and obscure to-day as it was when the Spaniards first invaded the country. The most diverse views have been entertained as to its etiology. Poisoning of the streams by the Spaniards, faulty water supply, malaria, sudden changes of temperature, etc., have all had their advocates and their opponents. That it is a microbic disease, there can be no question, although it has behaved in such a way only to a limited extent. The sources of infection are limited to a very few localities on the west slope of the Andes Mountains.

Cases which find their way outside the limits of origin of the disease have never been known to spread the disease beyond the restricted zone which it inhabits, and where it has existed for centuries.

The monograph gives a detailed account of the geographic distribution of this disease, with illustrative maps. During the Spanish invasion, verruga prevailed at Quaque, a bay in the province and government of Esmeraldas, but since then it has entirely disappeared from the coast of Peru and is now comprised to three departments of Peru, namely: A narrow zone of the department of La Liberdad, the department of Anachs, and finally that of Lima. The malady exists only on the west slope of the Andes Mountains along water courses.

in a few valleys, and more especially in the narrow and deep valleys between mountains known by the name of *quebradas*. But the disease does not necessarily originate along the whole length of these water courses, and does not extend more than 28 to 60 kilometers inland from the coast, at an altitude of 2,000 to 10,000 feet above the sea level.

Clinical observation has shown that the disease varies in its virulence from the most fatal to the mildest forms. The grave fever of Carrion, with or without eruption, prevails in the same localities and under similar conditions as does verruga. The fever is generally known as the "fever of Oroya," an improper term, as it is very likely to mislead one to believe that it is limited to Oroya and its immediate neighborhood, while as a matter of fact it is never met with at an altitude above Matucana. The name, then, implies only that this form of fever is met with most frequently on the way from the coast to the mountain heights of Oroya.

The self-inflicted disease of Carrion gives us the clearest

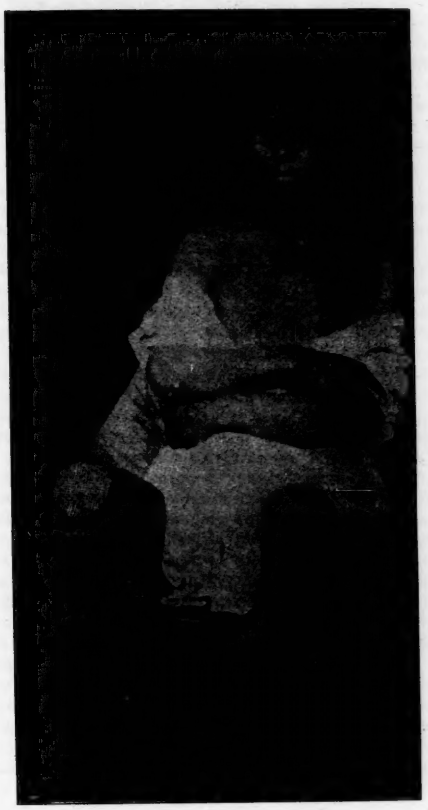

Fig. 44.—Nodular verruga.

ideas on the symptomatology of this, the gravest form of verruga. He inoculated himself on Aug. 27, 1885, with blood taken from a verrugous swelling, making two inoculations on each arm, as practiced in ordinary vaccination, selecting the same places. On September 17 the first symptoms appeared, making the period of inoculation twenty-one days, and in rapid succession all the symptoms of this grave form of fever developed. He succumbed on October 5, in the arms of his comrades, profoundly anemic, twenty-nine days after inoculation, and after the disease had progressed through all the stages of what was then known and described as Oroya fever. This memorable experiment threw new light on the nature of the grave form of the disease, and confirmed not only its intimate connection with verruga but demonstrated also that it is the same thing. Besides demonstrating the identity of the two diseases, the experiment of Carrion proved that verruga is inoculable—microbic. In many of these grave cases the eruption does not appear at all or very feebly, as is the case in the most malignant forms of smallpox and measles.

Odriozola observed a fatal case in which, besides the usual external nodules, which paled and disappeared, the eruption was found on postmortem in the muscles of the leg, a condition indicated during life by great pain and cramps. As a rule, the grave fever precedes the eruption, which is quite variable in its appearance. It differs from the ordinary verruga by the intensity of the general symptoms, and the greater fatality, but, in other respects, presents only an enlarged clinical picture of the ordinary form of the disease. It is taken for granted to-day that Carrion's disease is a microbic affection, and Dr. Barton, who has had a large experience with such cases, and who has investigated its microbic cause, believes he has discovered the parasite in the form of a short bacillus, which he has found in red corpuscles of the blood in patients suffering from this disease, but sufficient evidence is so far lacking to demonstrate beyond all doubt the etiologic relationship between this bacillus and Carrion's disease.

Salazar, in his excellent thesis on this disease, which he called *Verruca andicola*, had firm faith in the microbic cause when he said: "La maladie est produite par un principe spécial qui, comme tous les virus, est invisible et impalpable; son véhicule ordinaire, c'est l'eau de quelques sources situées

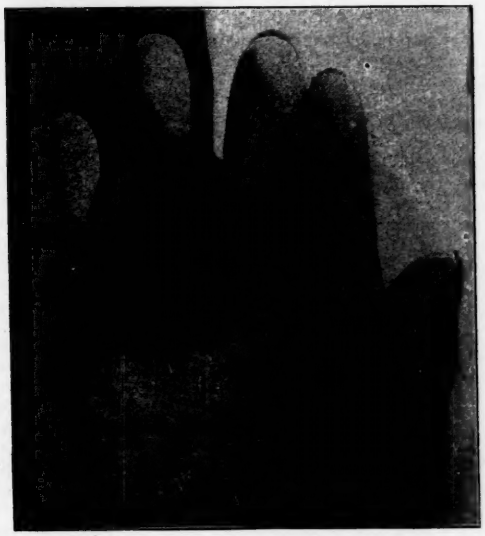

Fig. 45.—Large ulceration of ring finger and palm of hand, showing central black eschar produced by perchlorid of iron, the whole surface ulcerated.

sur le versant occidental des Andes, d'après l'opinion généralement admise." That the parasite of the disease exists in the water supply is more than probable, because the disease is disseminated along certain water courses, which pass through the deep mountain cuts on the west side of the Andean watershed. Tschudi said the disease may be contracted by drinking a single glass of water taken from these contaminated streams, while those who only pass through these valleys can do so without any danger.

Odriozola believes that the poison exists most frequently in the water, but that it also lives in the atmosphere and soil, as persons have contracted the disease who abstained from drinking the infected water. Clinical observations have demonstrated sufficiently that certain diseases, like syphilis and tuberculosis, increase the liability to this disease and increase its malignancy. Among the pathologic changes wrought by the disease, anemia of a profound character is the most constant and striking. Whatever the bacillus of verruga may be, it is a blood destroyer, and causes a progressive anemia, which is one of the characteristic features of the disease.

The blood is very thin, coagulates very slowly and is of a dark venous color. The liver and spleen are frequently enlarged and engorged, although the latter has not infrequently been found of normal size, or even smaller than normal. These organs are usually softened and friable. The lymphatics are engorged and enlarged, more especially so those of the mesentery, and to a lesser extent those of the neck, supraclavicular and carotid regions.

Peyer's patches and the solitary glands are also generally found to be increased in size. The urine furnishes no diagnostic information. The medullary tissue in the bones has also been found in a state of active proliferation.

From what has been said, it follows that the important lesions of this disease are anemia and active proliferation of the ells of the blood-producing organs. The bacteriology of the disease has been studied by Izquierdo (1885), Florez (1887), and recently by Dr. Barton, all of whom found in the blood either a bacillus or coccus, which they claimed was the cause of the disease, but as has been stated before, sufficient proof has not thus far been furnished as to the direct etiologic relationship between any of these and the disease, so this interesting field remains open for future scientific research.

The temperature in Carrion's disease is very irregular and often misleading. The temperature curves could not be more irregular, as they are not the same in any two cases. One must not forget that in the grave fever of Carrion there is always a fundamental element—the eruptive element—ready to enter into activity. The temperature is also influenced by malaria engrafted on the disease, by therapeutic intervention and congestive or inflammatory complications involving different organs. In simple cases uninfluenced by the conditions enumerated, the temperature follows a regular course always the same and which it is important to know.

In the great majority of cases the temperature is not high in the beginning, and it takes several days, even a week, before it reaches a high degree. Generally, there is a slight rise in the temperature every day or two, especially in the evening, but it does not exceed 38, 38.5 or 39 C. This is what might be called the preparatory febrile period. In some cases this preparatory febrile period does not exist and the disease begins brusquely, commencing with a severe chill, followed by a high fever (40 C. or more) and abundant sweats. At other times, the chill is the point of departure of a remittent form of fever, so that one must recognize two types of fever, intermittent and remittent, and on this account the fever is often mistaken for malaria. At this stage, patients are seldom confined in bed. The preliminary fever usually lasts for six days or even longer, the other symptoms not being intense. Suddenly there sets in a severe chill, followed by high fever, and from that time the fever is installed definitively, as in cases in which the disease has an acute beginning. The intermittent type is quotidian with evening exacerbations more rarely tertiary. The remittent type, however, is more common and preserves this character to the end. The morning temperature varies from 37.5 to even 39 C., while in the evening the thermometer registers from 35 to 40 C., and even higher. The mean duration of this fever is from twenty-five to thirty days. In fatal cases the temperature vacillates between the two extremes, often falling to subnormal.

Anemia, in the grave fever of Carrion, constitutes the predominating objective symptom. There is no other disease in which this symptom reaches such a high degree and in such a short space of time. The yellowish discoloration of the skin and conjunctivæ accompanies the anemia, and may reach a degree of discoloration similar to that of jaundice.

Hemorrhages are not rare. Epistaxis is the most frequent form, but intestinal and subcutaneous hemorrhages in the form of peteehiæ are quite frequent. The eruption is either preceded by fever or the fever coincides with the eruption, or finally, the fever follows the eruption. Early appearance of the eruption is a favorable sign, and physicians are therefore anxious to examine for it day after day. The skin eruption first appears as an efflorescence, the little spots gradually increasing to hard, elevated nodules from the size of a mustard seed to that of a pea. The mucosa of the mouth is generally the seat of a miliary eruption involving the cheeks, palate, gums, tongue, etc. These miliary eruptions are frequently preceded by spots forming an efflorescence from which the nodules later take their origin.

Profuse sweating and the appearance of sudaminæ are frequently observed, as well as edema of the lower extremities, which begins about the ankles. Loss of appetite, nausea, vomiting and diarrhea are the most prominent symptoms referable to the digestive organs. Vertigo, severe headache, muscular and joint pains, cramps, insomnia, delirium, hiccough and jerking of tendons show the extent of involvement of the nervous system.

In acute cases the disease proves fatal in from twenty-five to thirty days. In the chronic, and less grave form, the disease pursues a slow course, during which the temperature may remain normal or nearly so. Where the fever subsides suddenly, recovery may be expected, but the chronic symptoms may continue for a long time. Sometimes acute exacerbations appear in the course of the chronic form, and these usually indicate the appearance of complications, such as the breaking down of large nodules or the implication of new organs. These variations in the temperature suffice to show the effort which the organism makes from the commencement of the disease to abort the eruption. In favorable cases the nodules disappear gradually by absorption, leaving for sometime a discoloration of the skin over the place from which they disappeared.

The usual complications of the grave fever of Carrion are of two kinds: Congestions and inflammation of the lungs and enteritis or enterocolitis. The first of these is of frequent occurrence and renders the prognosis very grave. The inflammation appears generally at the base of the lung and is announced by a rise in temperature. The second variety of complication is perhaps the most frequent, and is announced by diarrhea with stools mixed with blood, which also compromise the life of the patient. The hemorrhages, by their frequency and abundance, may also become grave complications.

In the diagnosis of this disease the rapidly increasing anemia is most suggestive. The appearance of an intense anemia and of a subicteroid tint in a very few days, should place the physician on his guard in making a diagnosis in a suspected case. The greatest difficulty is encountered in the early differential diagnosis between malaria and Carrion's disease, without the necessary blood examination for the parasite of malaria, a resource in clinical diagnosis, which, I fear, has not been resorted to as often as it should be by the mass of the medical profession of Peru.

In the treatment of this disease, certain popular remedies have occupied a widespread reputation, as decoctions of mats (*Aristolochia tenera*), Chamana (*Dodonœa viscosa*), norbillo (*Passiflora littoralis*), but their action on the course of the disease is entirely *nil*, or at least very uncertain. Sulphate of quinin has been the remedy of choice, and to-day its virtues are recognized. Salicylic acid, on the recommendation of Velez, has had a very extensive trial and has been of good service in counteracting some of the symptoms of this disease, but its curative powers have been greatly overestimated. Phenic acid has been used internally and by hypodermic injections without more success. Other antiseptics employed for the same reason have proved similarly disappointing. The rebellious condition of the stomach in this disease would seem to contraindicate all attempts to use medicines by that route. Fowler's solution of arsenic and different preparations of iron have been used very largely in the treatment of this disease, and the present medication includes largely a class of remedies which are regarded in the light of tonics.

It is very probable that after the real microbic cause of the disease has been determined, a prophylactic and curative serum will be discovered which will eventually eliminate verruga from the nomenclature of unpreventable diseases. The application of compresses of ice water to the head has done much to relieve the intense headache and other symptoms referable to the nervous system. Some authors believe that the grave fever of Carrion really constitutes the first period of the eruption. If this be the case, sometimes there are cases in which eruption and fever appear at the same time; the fever sets in in other cases after the eruption has made its

appearance, and still in others after the eruption has disappeared. The grave fever of Carrion can not be considered a stage of the disease; it is the disease itself at a stage of maximum concentration, and this is so true that a great number of patients, almost from the beginning, present small nodules with a rosy tint, which are the most striking proof of the fight of the organism, and for the efforts it makes to direct the eruption outside, and that the fever is most of the time an unfortunate consequence.

Odriozola is satisfied that in a great number of cases of this fever, of rapid course which kills in a few days, and which presents some small nodules of the skin, without any tendency to increase in size, must be complicated by an internal eruption, often localized in the muscles. In the evolution of the fever, one discovers one or more nodules. On the other hand, the period intervening between the first symptoms of the disease and the appearance of the eruption is not one of perfect health, as there is almost always headache and vague muscular and articular pains with the access of the erratic fever. There is then a sort of equilibrium between the grave fever of Carrion and the eruption. This grave fever is absolutely not a period of verruga, but the disease itself.

The period of incubation is always the same, whether the infection is grave or benign. The opinions on this subject are not the same, as some authors claim that it can be prolonged for months and even a year. Careful investigation has, however, shown that such long delays do not exist. The error arises from the fact that one has been in the habit of believing that continuous fever and pains are the first symptoms of the disease. On close examination, however, slight symptoms are detected, which mark the beginning of the disease long before the most striking symptoms make their appearance. Among these may be mentioned a feeling of general malaise, indigestion, diarrhea, gastric disturbances, chills, and especially anemia. These slight symptoms must be regarded as occurring in the outset of the disease. In this matter verruga follows the same course as all diseases of telluric origin.

The chronic form of Carrion's disease begins insidiously, with a feeling of general indisposition, vague pains, loss of appetite, increasing anemia, etc., and in this way the actual date of the outbreak of the disease is obscured. If one takes the temperature, a slight elevation is detected; it rarely rises at this stage above 38 C., and finally the fever assumes a more pronounced quotidian vesperal type. The muscular and articular pains increase in severity. This period of invasion is sometimes very long and is often entirely overlooked. The disease during this stage is very often mistaken for rheumatism, a mistake which is quite excusable, as the painful joints are sometimes swollen.

The fever in the eruption of verruga is not so regular as in the grave fever of Carrion. It appears early with the first symptoms, and is never entirely absent. It assumes a quotidian, seldom tertian, form, with a normal temperature in the morning and a slight rise in the evening, and is always followed by profuse sweating. In the most benign form the fever is erratic. In the miliary form it generally happens that a few days before the eruption appears the fever subsides. In exceptional cases, the temperature may rise to 40 C., and even higher when during a profuse sweat the papular eruption appears, which disappears again in ten or fifteen days.

In the form of verruga, called mulaire, which is characterized in the beginning by the appearance of intradermic or subdermic nodules, the fever invariably precedes the eruption, which is always discrete.

With the periodic appearance of new eruptions, the temperature increases each time, as a certain number of nodules appear in a region and decreases as the nodules develop into large swellings. Edema of the lower extremities is quite a frequent phenomenon in verruga, as it is in the grave fever of Carrion. It is more frequent in the mulaire than in the miliary form.

The eruption of verruga has always been a source of interest and careful study to physicians who have dealt with this disease, and it was first described with the necessary accuracy by Malo, Rios, Manuel Odriozola and Salazar. The studies of Salazar especially have been the point of departure of later descriptions. Two forms of eruption have been recognized: One, characterized by very small nodules and called miliary or tubercular, the other constituted by larger swellings, named mulaire or globular. This classification, however, does not correspond exactly to the clinical aspects of the eruption, but indicates rather the two extreme links of the same chain, which differ largely in size only and have many intermediary forms. In the evolution of these swellings, one must admit the existence of periods of hemorrhage and desiccation, or rather a period of growth and a period of regression. If one wishes to make a distinction between the miliary and globular forms, besides the size of the swellings, it is the place where they take their origin. The miliary form involves the superficial layers of the skin, while the globular form is intradermic or subdermic. This distinction in the location of the eruption was well shown in the case which I described in the beginning of this article, where I found a globular swelling which originated underneath the skin. The nodule is often preceded by a minute hemorrhage under the malpighian layer of the skin, and, little by little, it increases in size and assumes the aspects of a little red button with a shiny appearance and pointed. At other times the nodule appears as a rose-colored drop, more or less brilliant like sudamina, and presenting often in the center an umbilication which generally corresponds to a pore of the skin and resembles often the pustules of smallpox. In other cases, the nodule commences as a small elevation of a dull white color, simulating a hypertrophied cutaneous papilla. Their size varies from a pinhead to that of a small pea. When they become larger, they belong to the globular variety. The skin all around preserves its normal appearance. The largest nodules show a tendency toward pedunculation. Exfoliation of the nodules is a constant occurrence, and ulceration and crust formation occur when the swellings attain a certain size, and they then disappear more or less rapidly.

Exfoliation of the overlying skin is a constant occurrence if ulceration does not take place. This action is especially noticed in miliary verruga in a state of regression. In some cases the eruption does not assume a nodular form and the papules disappear slowly, with or without a slight hemorrhage. In another group the nodules assume a warty appearance and disappear by the exfoliation of the thick grayish, brownish or black crust. They leave after their disappearance a slight discoloration of the overlying skin, but the smallest ones leave no discoloration whatever. The miliary eruption may be discrete or confluent. The favorite seats are the anterior surfaces of the limbs, next in frequency come the face and the neck. Occasionally, but rarely, they appear on the palm of the hands and sole of the feet. The eruption seldom appears on the trunk. The nodules appear first on the legs, the hips and the forearm, the face, neck and scalp. Itching is a very common and distressing symptom when these nodules disappear by regression. They nearly always attack the mucous surface, where they form flattened nodules. The conjunctiva is frequently affected, and the disease may destroy the eyeball in its course. The peritoneum and pleura are not infrequently the seat of internal verruga, and the disease often affects the respiratory organs. The central nervous system may be involved, as was observed by Carrion as early as 1885, and proved by the researches of Dr. Quiroga y Mena in 1889.

In the globular (mulaire) form of the disease, the nodules increase in size and form adhesions with the surrounding tissues and often progress to ulceration. They are observed most frequently about the articulations of the leg and on the back of the hand. The skin over the nodule becomes attenuated, violaceous, and finally gives way, leaving an open fungous mass of granulations of the size of a nut to that of an apple. These swellings are either sessile or pedunculated, and the surrounding skin is of a brownish color. Suppuration and ulceration take place only when the skin covering the globular verruga has become involved, never while it remains intact. The granulomatous nature of the local products of the verruga disease has been repeatedly demonstrated by the microscope since the first efforts were made by Velez in 1861.

Clinical Notes

McBURNEY'S POINT AND ANOTHER POINT IN APPENDIX DIAGNOSES.*

ROBERT T. MORRIS, M.D.
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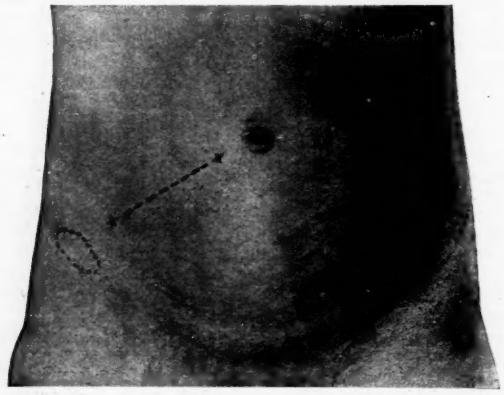
Draw a line from the right anterior superior spine of the ilium to the navel. On this line, an inch and a half from the anterior superior spine, we find McBurney's point. Tenderness on deep pressure at this point gives presumptive evidence of an irritative process in the vicinity of the appendix vermiformis, but tenderness on superficial pressure at this point may mean irritation of sensory nerves of the abdominal wall, and the irritation may be due to causes ranging from hysteria to toxemia. McBurney's point is of great diagnostic value to physicians who possess a considerable degree of collateral knowledge, aside from their familiarity with the symptoms of appendicitis.

Instead of going out on the line to a point an inch and a half from the anterior superior spine of the ilium, come back on the line to a point situated an inch and a half from the navel. Here we find another tender



McBurney's point and another point in appendix diagnoses.

point of definite diagnostic value. McBurney's point and the point here described are six inches or more apart in the adult of average proportions. The point here described has reference to the right lumbar ganglia of the sympathetic nervous system, and notable tenderness of these ganglia has a diagnostic value which may briefly be placed in classification under the following heads; the statements are to be taken as general ones:

1. In the early stages of an acute infective process of the appendix the right lumbar ganglia are tender and the left lumbar ganglia are not tender. (The left lumbar ganglia may be described for diagnostic purposes as lying an inch and a half to the left of the navel.) Under these circumstances the point here described is of secondary importance, while McBurney's point is of prime consequence.

2. A.—When an acute inflammatory process of the appendix has subsided, leaving a mucous inclusion or scar tissue, there may be no tenderness on pressure at McBurney's point, but there is tenderness at the point here described and no tenderness at the point of the left lumbar ganglia.

B.—When the appendix is undergoing a normal involution process, with replacement of its lymphoid coats by connective tissue, digestive disturbances and various local neuralgias may be due to irritation of nerve filaments entrapped in the new connective tissue. There may be no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglia.

C.—When the appendix is congested without the presence of infection, as in many cases of loose kidney, there may be little or no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglia.

Under circumstances A, B and C the point which is here described rises to a position of primary importance, and McBurney's point falls to a position of no consequence or of secondary importance. The point here described will be found to be of value in every-day diagnostic work for differentiating between irritations of appendix origin and irritations of pelvic origin. In irritations of pelvic origin both right and left lumbar ganglia are tender. Take, for illustration, a case in which the appendix and the right Fallopian tube are bound together by adhesions. We are to decide whether certain symptoms proceed from the appendix or from the Fallopian tube. If the symptoms proceed from the appendix the point here described is tender alone. If the symptoms proceed from the Fallopian tube both right and left lumbar ganglia are tender together. Irritation from a scar at the cervix uteri, or from hemorrhoids, will make both right and left lumbar ganglia tender together.

Taking cases as they run in daily practice, tenderness at the point here described alone means irritation proceeding from the appendix alone. Tenderness of both right and left lumbar ganglia together means irritation proceeding from some structure situated in the pelvis.

Under circumstances A, B and C, again, the question often arises as to whether an abdominal irritation proceeds from the appendix, from the pelvis, or from some point above the navel. If the irritation proceeds from some structure situated above the navel, neither the right nor the left lumbar ganglia are tender. A practical feature of the point here described is this: During the year perhaps fifty of the patients sent to me for operation for appendicitis are not operated on for appendicitis; they are either not operated on at all, or have attention given to some organ other than the appendix. Very little time is required for fixing the point in mind. In the course of one day's office work one may examine several patients who will demonstrate the point.

To recapitulate: A patient comes in with the appendix in the form of a question mark. Right lumbar ganglia tender, alone—appendix trouble. Right and left lumbar ganglia tender, together—pelvic trouble. Neither right nor left lumbar ganglia tender—trouble somewhere cephalad from pelvis and appendix.

616 Madison Avenue.

* Presented at the Surgical Section of the New York Academy of Medicine, 1907.

Spontaneous Relaxation of the Symphysis Pubis After Delivery.—In the *Revista de Med. y Cir.*, July 25, Arteaga reports that, three days after normal delivery, a multipara found herself unable to move her legs without intense pain in the lower abdomen. Under rest and tonics, conditions returned to normal in two weeks.

LARGE LIPOMA OF THE OCCIPITAL REGION.*

CASSIUS C. ROGERS, A.M., M.D.
CHICAGO.

From the literature of lipoma of the scalp Chipault collected fifty-four solitary cases located as follows: In the frontal region, thirty-seven; in the parietal region, four; in the temporal region, five, and in the occipital region, eight. On account of the rareness of large lipomata of this region I submit this case for publication:

History.—Mr. W., American, aged 79, painter by occupation. Eleven years ago he noticed a tumor on the back of his neck, just below the occipital protuberance. It was, when first noticed, about the size of a split English walnut, painless and freely movable. At this time little attention was paid to it, but as it continued to grow, its weight caused some discomfort and he sought medical advice. About two years ago he was

Fig. 1.—Side view of patient showing tumor.

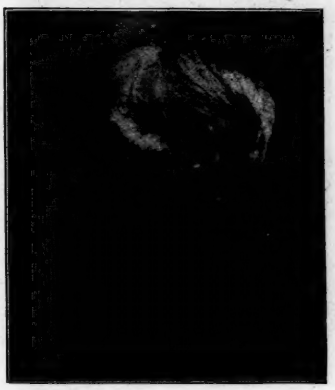


Fig. 3.—Side view of patient after removal of tumor.

advised to have the tumor removed, but refused operation. About a year ago the tumor began to grow more rapidly until it reached the size shown in Figure 1. On account of its great weight the discomfort became unbearable, and on March 12, 1907, eleven years after the discovery of the growth, he entered the Frances E. Willard Hospital to have the tumor removed. At his request he was assigned to my service and March 13, 1907, he was operated on in my clinic.

Operation.—On account of the extreme age and feeble condition of the patient, a general anesthetic was deemed unadvisable, so without either general or local anesthesia the large tumor was removed. Very little pain was experienced on account of the long continued traction made on the skin by the weight of the pendulous tumor and the poor nerve supply. By making a long superior and inferior skin flap, the large denuded surface, after the tumor was removed, was readily covered by suturing the margins of the flaps after arresting all hemorrhage. Duration of operation twenty minutes.

Postoperative History.—The patient left the hospital the second day following the operation. Recovery was uneventful and complete. Healing was by primary union throughout. Stitches were removed at the end of the first week and wound dressed with a dry sterile gauze dressing. Figure 3 shows the condition five weeks after operation.

Pathologic Examination.—The tumor, after removal, was given to Dr. A. M. Stober, who furnished the following description: The tumor weighed seven pounds and measured 12 by 17 by 20 cm. (5 by 7 by 8 in.). The tumor was covered with skin which was tightly stretched and the hair follicles were widely separated and atrophic areas were present. A thin, well defined fibrous capsule surrounded the mass and supported numerous anastomosing vessels. On section the tissue was firm and consisted principally of yellow fat tissue, through which ran well marked fibrous trabeculæ. Considerable clear fluid, on which floated numerous fat globules, exuded from the cut surface. Histologically, this tissue resembled ordinary fat tissue, supported by a rather abundant fibrous stroma.

72 East Madison Street.

* Part of the illustrations are omitted for lack of space, but all appear in the author's reprints.

A PRACTICAL POINT IN PROPHYLAXIS.

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PEORIA, ILL.

When it is realized how often the soles of the shoes come in contact with infectious matter and how little is done to destroy such infection, it is readily seen that here is a neglected point in prophylaxis. A man walks the streets and then, with the same shoes on, walks over the carpet on which his babe creeps, placing everything

Showing shoe disinfector and manner of using.

it reaches, as well as its fingers, in its mouth. The shoes are removed on retiring and the individual goes to bed with the taint of the day's travel on his hands. A nurse spends the day in a typhoid ward, using all precautions to protect other patients, but the shoes she wears —what becomes of them? The interne passes from ward to ward with uncleaned shoes, sufficient dirt and débris clinging to the leather to protect the bacteria from the disinfecting power of air and sunlight and they retain their virulence for days and become a continued source of infection. This fact has been proved by numerous experiments, both on cultures and by animal inoculation.

How often the physician puts on a gown, cap and rubber gloves before going into the wards of an infectious hospital and yet leaves the soles of his shoes unprotected; the same man may go from the home of a careless tu-

berculous patient to his own nursery. Has he taken proper precautions? I do not believe he has, and I believe his action approaches criminal negligence. May not this be the mode of infection in those fairly numerous cases of typhoid fever which occur among physicians and nurses in hospitals?

Many do not realize this danger, others may believe it is small and the majority neglect to take precautions because there is not a ready practical means of overcoming it. In trying to prevent carrying the contagion of infectious diseases on my shoes I found it could readily be done by pouring a 10 per cent. solution of formaldehyd on some paper and standing on it. That, however, was a crude method and left a disagreeable odor in the room. Afterward I tried the principle of the ink-pad with satisfactory results, it being cheap, efficient and readily used. A rectangular tin dish, 12 by 5 by 3 inches, was fitted with a hinged cover and a base-piece by which it could be fastened to the floor. A thick layer of cotton covered with felt was placed in the dish and saturated with 10 per cent. formaldehyd. The cover was made to protrude over the end of the dish so that it could be readily lifted by the toe of the shoe. The pressure of the foot on the pad presses out the fluid and bathes the sole and heel of the shoe with disinfecting fluid. The cover falls into place when the foot is withdrawn and prevents undue evaporation of the fluid. The formaldehyd will last for weeks, will not rot the leather and can be renewed at will. Such an outfit is inexpensive—the one described costing but twenty-five cents.

ANESTHESIA OF THE CORNEA AND CONJUNCTIVA IN CEREBROSPINAL MENINGITIS.

E. BURVILL-HOLMES, M.D.
PHILADELPHIA.

In looking over the literature on epidemic cerebrospinal meningitis I have failed to find any allusion to a sign that I have noted in this disease; viz., analgesia, or partial, or complete anesthesia of conjunctiva and cornea. During the past two and a half years while at the Municipal Hospital I had the care of a large number of these cases and I discovered the phenomenon by accident. A young patient suffering from disease had a marked purulent conjunctivitis of the left eye and in making a culture from the pus in hopes of isolating the specific organism—which I may add was present—found that the swab could be passed over the bulbar conjunctiva without any apparent reflex. The opposite eye was equally insensitive. Sensation elsewhere did not appear to be abolished—indeed there was considerable hyperesthesia.

Subsequently, all patients were examined routinely for the presence of this symptom and it was found in many cases, fully one-half I should say.

It has been suggested that the symptom might be expected in an unconscious individual, but of course such argument is not founded on fact. A patient can be rendered unconscious from an anesthetic yet the corneal reflex persists until deep narcosis is induced. The unconsciousness from alcoholism or uremia is not accompanied by corneal or conjunctival anesthesia. As a matter of fact, this symptom was noted in patients who were perfectly conscious often showing analgesia or more or less anesthesia of one or both eyes, as I was able to demonstrate to my associates on more than one occasion.

It is doubtless due to some disease of the fifth nerve, inasmuch as we know that the ciliary branches of that nerve innervate the cornea while the supraorbital and supratrochlear branches are the sensory nerves of the conjunctiva. Occurring as frequently as it does, it would seem a valuable sign in differentiating this disease from other diseases wherein meningeal symptoms are associated, such as typhoid, typhus fever and uremia.

2030 Chestnut Street.

AUTOMATIC TIME SWITCH FOR *X*-RAY WORK.

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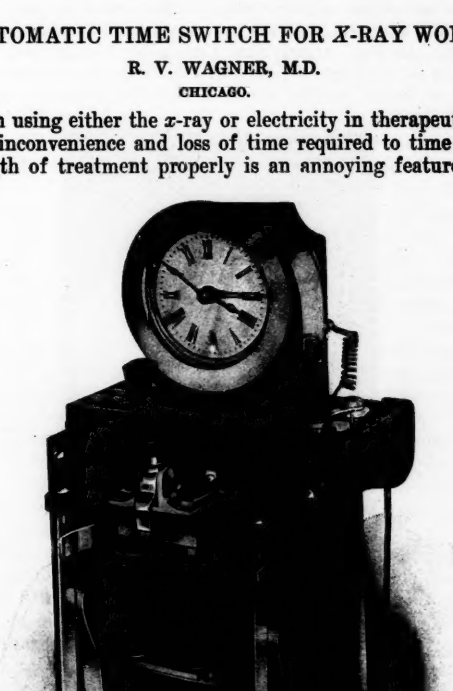
CHICAGO.

In using either the *x*-ray or electricity in therapeutics, the inconvenience and loss of time required to time the length of treatment properly is an annoying feature of



the work. More especially is this true when the *x*-ray is used, as the length of exposure is of the utmost importance. The safety of the patient requires great care in order that over-exposure be avoided, and safety to the operator requires that he should not remain present longer than necessary, even when ordinary protection is employed.

I have devised a new automatic time switch which is very simple and positive in operation, and can be depended on to stop the treatment when the time is up by cutting off the current. This not only makes it unnecessary for the physician to be present during the time of treatment, but also relieves the patient from anxiety caused by fear of too long exposure on account of the physician's absence.

The switch is controlled by a clock, the face of which

is equipped with a movable ring holding a contact point. The contact point may be placed a fraction of a minute, or as many minutes as desired, ahead of the minute-hand for the length of treatment to be given. When the minute-hand moves forward enough to touch the contact point, the current from the dry cells in the subbase causes an electro-magnet to release the knife switch which flies open, cutting off all current supply to the apparatus. The switch, when closed, is held by a clip and is so designed as to permit of being used independently of the automatic time device. The switch proper can also be taken off the subbase and used as a substitute for any other switch, while the subbase carrying the clock and holding the cells may be put in some other place more convenient to the operator. As the switch may be used for any kind of current, and for coil equipment, as well as with static machines, wall plates, sinusoidal apparatus, etc., it will afford a means of saving much time and responsibility for one who uses either *x*-ray or electrotherapy.

140 Wabash Avenue.

THE MICROBE OF POLIOMYELITIS.

FRANCIS HARBITZ, M.D., AND OLAF SCHEEL, M.D.
CHRISTIANIA, NORWAY.

In our article concerning epidemic acute poliomyelitis, we mentioned very briefly[1] that bacteria were found in the cerebrospinal fluid in three of the cases which we examined, and that Dr. Geirsvold also succeeded in demonstrating bacteria in the fluid withdrawn by lumbar puncture in twelve cases. Inasmuch as the specificness of these bacteria is a question of great interest, and as other investigators possibly may make similar observations, we desire to supplement our former statements with certain additional facts in regard to the character of the bacteria in question and in regard to other earlier observations in the same field.[2]

The bacteria demonstrated in the spinal fluid were bean-shaped diplococci or tetrads which grew after from two to six days on artificial cultures. In broth they formed short chains of four to six. On agar (ascites, blood or glycerin) they grew as fine gray colonies, and more and more luxuriously as transplantations were made. The cocci were very resistant, and the cultures remained alive for weeks and months. They stained easily with diluted carbolfuchsin and with Gram's method; in old cultures the staining with Gram's method was somewhat variable. The cultures were virulent for animals in that they caused atrophy, paresis, emaciation and death.

Perhaps, the same bacterium was found as early as in 1898 by one of us (Harbitz);[3] cultures were then obtained but no results followed animal inoculations, and the organism was not studied any farther. On the other hand, Looft and Dethloff,[4] practicing physicians in Bergen, Norway, in 1901 demonstrated a meningococcus-like microorganism in the spinal fluid of 2 cases of acute poliomyelitis; this organism corresponded in all essentials with the one subsequently found by Dr. Geirsvold. The Bergen physicians also succeeded in obtaining pure cultures. It is well to mention also that Prof. Fr. Schultze[5] has found bacteria in the spinal fluid in a few cases of poliomyelitis, but he has not made any closer study of them.

Bacteria have been demonstrated frequently and with so uniform results in acute poliomyelitis that subsequent examinations are desirable. In regard to the specificness of the microbes, not much can be said at the present time, especially because it has not been possible to demonstrate them in the nervous tissues themselves. It should also be borne in mind that similar or morphologically more or less related forms have been found in the spinal fluid in tuberculous meningitis and also in cerebrospinal meningitis. Further investigation should be continued with as fresh material as possible and as early in the attack as it can be done.

1. THE JOURNAL A. M. A., Oct. 26, 1907.
2. In regard to details see the complete publication: Path.-Anat. Untersuch. über akute Poliomyelitis u. verwandte Krankheiten von den Epidemien in Norwegen, 1903-1906. Videnskabsselskabets Skrifter, Mathem. Naturvid. Kl., 1907.
3. Bülow, Hansen and Harbitz: Norsk Magaz. f. Lägevidenskaben, 1898.
4. Medicinsk Revue, 1901, and Dethloff: Norsk Magaz. f. Lägevidenskaben, 1905.

SELF-CASTRATION.

A. E. A. MUMMERY, M.D.
SALINE, MICH.

Mr. L. T.; aged 24; married; occupation, rural mail carrier; was first seen Nov. 6, 1907, at 11:10 p. m. I found the patient in a semi-conscious condition due to loss of blood; no radial pulse; heart action, 130; temperature, 97.4 F. He was lying in a pool of blood coming from a wound in the scrotum, caused by the removal of the left testicle, the cord being cut within the tunica vaginalis. I immediately applied pressure over the pubic region, and after removing clots with my finger, caught and tied vessels with chromicized catgut. The sac was then irrigated with a hot 1-1000 solution of alphazone.

The active hemorrhage being controlled, the cavity was packed with 10 per cent. iodoform gauze, and a light bandage was applied. The heart was stimulated with 1/60 gr. strychnin sulphate, administered hypodermically, and pain was controlled by scopolamin and morphin. A normal salt enema was also given. Hot water bottles were applied, and in an hour the enema was repeated, the patient's condition improving; pulse, 114, and stronger; temperature, 98. In two hours the heart action was still improving and the patient was asleep.

At 6 a. m., the pulse was 100; temperature, 99.2; patient was feeling stronger. A liquid diet was ordered. At 4:30 p. m., the pulse was 94; temperature, 99.4. Having rested well during the day, the patient was stronger and in good spirits, but complained of some pain.

November 8, 9:30 a. m., pulse, 87; temperature, 99.1. The dressings were removed, and the wound was irrigated with alphazone, 1-2000, and packed with iodoform gauze. There were no signs of infection, but there was much ecchymosis of the parts. The irrigations and packing were repeated daily, diminishing the quantity of gauze each time, until on the eighth day, when it was unnecessary. There being a little pus on the ninth day, the wound was irrigated and wiped out with 96 per cent. phenol. Recovery from then on was uneventful.

The circumstances which brought about this deed are as follows: His wife being pregnant, sexual intercourse became very distasteful to her. When young he had formed the habit of masturbation, due chiefly to a long, tight foreskin, and he now resorted to this way of satisfying his passion. Being a zealous church member and reader (not student) of the Bible, he read of the condemnation of Onan, and worried about himself. He read the passage in Matthew 18, 8-9, "If thy hand or thy foot offend thee, cut them off," etc., "If thine eye offend thee, pluck it out," etc. After due consideration, he decided to rid himself of the offending parts. Being left alone for a few days, he carried out his intention, at about 9 p. m., by using a razor. After removing the left testicle he became alarmed at the hemorrhage, which prevented him from unsexing himself completely. At 10:30 p. m., feeling faint, he went to the home of his aunt, about ten rods distant, and had her call his wife and myself. They immediately placed him in bed, where I found him at 11:10 p. m.

5. Ziegler's Beiträge, 1905, supplement.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JANUARY 25, 1908.

CONSTITUTIONAL FACTORS THAT MODIFY TUMOR GROWTH.

In previous issues we have discussed the progress being made in our knowledge of the general biology of tumor growth, as the result of the renewed activity of research on this topic in many and scattered laboratories. Among other developments has been noted the increasing evidence that the factors determining tumor growth are not so strictly local as has been generally assumed, and more and more attention is being given to the search for constitutional influences and chemical modifiers of tumor growth. Flexner and Jobling have made an observation that at first sight seems to be very peculiar and unexpected; namely, that injection of heated extracts of a transplantable tumor into animals increases their susceptibility to inoculation with living tissue from the same strain of tumor. One might expect that such injection of heated extracts would make the animal immune, or at least increase its resistance, to judge by the usual results of immunizing inoculations; but since the converse is true, one may look on the increased susceptibility as related to the phenomenon of hypersensitization (or anaphylaxis), which has been studied especially with reference to horse serum but which has been found to apply to practically all proteins.

During the course of his interesting experiments with various transplantable tumors, Dr. Leo Loeb[1] has made some valuable and highly suggestive observations concerning constitutional influences that modify tumor growth. It was found that when pieces taken from a mammary adenoma of a rat were transplanted into other rats the implanted tissues became necrotic, either in the central parts or entirely; whereas when the tumor fragments were implanted into the same rat in which they had originated no necrosis occurred. Similar results were obtained with a mixed adenomatous tumor of the mammary gland of a spaniel, for pieces transplanted into other dogs underwent complete necrosis while pieces implanted into the original tumor dog remained alive throughout. These results indicate that substances are present in the bodies or fluids of animals that develop tumors, which are essential for the maintenance of viability in the tumor, and which are not present in normal animals. Whether these substances are the cause of the original tumor formation or only the result of the presence and growth of the tumor, is yet to be determined. In the experiments with the mammary tumor of the rat just described it was observed that on her becoming pregnant the tumor nodules as well as the mammary gland itself began to grow, and the growth of both structures stopped simultaneously on the conclusion of pregnancy; this suggests that circulating substances may stimulate tumor growth, and that these may be different from the substances that are necessary for the mere maintenance of vitality in the tumors. Another interpretation of these observations is also possible; the growth may depend on absence of inhibitive substances that are present in normal animals, rather than on stimulative substances peculiar to tumor animals. In either case these experiments bring forward for study the relationship of other than local factors to tumor growth.

The relationship of the foregoing observations to the question of transplantability of tumors is apparent, and Loeb classifies the tumors so far studied into the following groups: 1. Those that can be transplanted into other species than that of the animal in which they originated; this has been done with the lymphosarcoma of dogs, which will grow in the fox. 2. Those that will grow only in members of the original species, or in hybrids or closely related varieties of the same species. 3. Those that will grow only in the same variety as that one in which it originated; e. g., a carcinoma has been observed in the Japanese mouse that can be transplanted into other Japanese mice but not into white mice. 4. Those which can not be transplanted even into other members of the same species, at least under ordinary conditions and by the usual methods. This last group includes the greater number of tumors of the lower animals, and probably also of man, although the evidence on this last point is of necessity very limited. It is probable that the factor that determines the failure of the fourth class of tumors to grow even in the homologous species is of importance in determining the resistance of the individual to metastatic spread of a tumor, which is a form of autoinoculation not essentially different from the hetero-inoculation performed by the experimenter.

1. Loeb and Leopold: Jour. Med. Research, December, 1907, xvii, p. 299.

PREVENTABLE DEATHS IN MINES.

Dr. J. A. Holmes, chief of the technologic branch of the Geological Survey, has recently stated that among every 1,000 coal miners employed in the United States a proportion of three and a half are killed every year. In Belgium, on the other hand, where the miners work under vastly more dangerous conditions, the death rate is only one to every 1,000 employed. Since 1890 our mines have killed 22,840 men and injured 50,000, and the death rate has been on the increase from 1901 to 1906. From his study of Belgian methods of preventing injury and death Dr. Holmes believes that the miners should not be held blameworthy until some factors

of uncertainty are eliminated. These he enumerates: The character of the explosives used in certain mines; the quantity of explosive which may safely be used in the presence of dust and gas; the quality of the gas and its dangerous percentages; the nature, extent and insulation of electric currents used; the kind and condition of the miners' lamps; probable underground fissures, determinable by the study of strata, from which gas may burst out. It is to the last of these factors that the deaths of more than 300 miners in the recent Darr mine explosion at Jacob's Creek, Pa., must be attributed.

In Belgium much disaster has been avoided by the mutual agreement between operators and miners to eliminate men known to be reckless and careless from positions of danger. In consequence, it seems, of this there has been no explosion during the last seventeen years in the most dangerous of the Belgian mines. It would appear that in our country little or no such care is taken; our mine inspectors, usually politicians, "go it blind" and blame Providence, that rather hazy influence which on convenient occasions bears so much opprobrium. Dr. Holmes' remedy is that there should be official investigations in each coal mine by expert commissions.

We have reserved for special comment—since it is of the greater medical interest—Dr. Holmes' mention of the character of the coal dust as an untoward factor, and of the extent to which it may be kept "safe" by spraying. This factor has much to do with disease in miners, though it plays little part in violent deaths. In the table of Mr. Frederick Hoffman, the actuary of the Prudential Life Insurance Company, the consumption death rate among workmen is the least of all among miners—6.4 per cent. But such is the case only among "wet" miners. This death rate in an occupation so insalubrious has amazed many investigators, and several explanations have been forthcoming. It is said that coal miners are picked men to begin with, the work they do precluding all of poor physique. Others think there must be some antiseptic property in coal dust. Cornet believes that in wet mining the point of saturation is so nearly reached that the desiccation and dissemination of sputum through the atmosphere is impossible. In "dry" mining, however, the consumption mortality is high, as it is in all dust-producing occupations; and Brandt observes that this varies also with the locality and the kind of material extracted from the earth. In England the death rates are very high for miners of tin, copper and lead, while coal miners show varying rates in different coal fields, but all low.[1]

Oliver, of Newcastle-on-Tyne, cites a death rate of 70 per 1,000 among white rock drill miners of the average of 35 years in the South African gold fields, as against 6.3 per 1,000 among English coal miners; and he believes that this enormous mortality difference has been due to the lack of precautions taken to prevent dust dissemination. He has wisely recommended that dry should be converted into wet mining by means of jets and sprays. On the invitation of the Transvaal Chamber of Mines, in 1903, several important machines have been contrived, such as the water drill of Leyner and the apparatus of Britten, which latter, while laying the dust, disposes also of the nitrous fumes generated in the blasting.

1. Huber (J. B.): Consumption and Civilization.

FEES FOR EXPERT TESTIMONY.

The question of the right of the physician to receive extra compensation for his services as an expert witness has been the subject of much discussion, and it is said that the cases in this country are nearly balanced and the question must be regarded as still an open one. The Kansas City Court of Appeals,[1] while admitting that there is strong argument to support either view, has decided that the physician is not entitled to receive extra compensation for acting as an expert witness, nor can he make a valid contract to receive extra pay for being a witness as to those matters to which, as the court holds, the law and his duty as a citizen alike require him to testify. While strong arguments may be advanced to show that the court takes a wrong view of the case, it remains true that this decision shows that the law is either unsettled or, as we believe, settled in the wrong way.

Expert evidence may properly be divided into that which has required special preparation and that which needs no special preparation. The right of a witness of the first class to extra pay arises from the fact that he is called on to perform a special service in informing himself or having already informed himself, and as a result of that information he performs a service which other witnesses can not give. The witness called as an expert by the state should be regarded as a special officer or employé of the state and is entitled to compensation for his services as much as is the state's attorney or the counsel employed to assist him.

The second class of expert testimony, differentiated in Great Britain by a committee appointed by the home secretary in 1902 as "professional" evidence, embraces cases in which the physician, in the course of his ordinary duties, becomes possessed of information which the law requires him to divulge in court. In such cases he appears to stand in the same relation as other witnesses and may be compelled to give his time in the cause of justice. He is under no obligation to make special preparation, and perhaps can not urge with justice that he should receive special compensation.

The fact that the law in regard to this matter is unsettled, as shown by the decision of the Kansas City court, makes it desirable that the rights and duties of expert witnesses should be explicitly defined by statute. Such a statutory definition would have the additional

1. THE JOURNAL A. M. A., Nov. 2, 1907, 1553

merit of making possible the solution of the more vexed question of the disputed value of expert testimony. The appointment of a medical man or a body of medical men as professional advisors of the court, as has been repeatedly urged in many quarters, would react beneficially in many ways.

The knowledge that such a strong, competent board of medical advisors existed, for the appraisement of statements, would probably often prevent the introduction of partisan professional evidence, thus saving the time of the court and obviating the unseemly spectacle of medical experts diametrically contradicting each other on matters of apparent medical fact. In the cases in which medical testimony was called on either side—for we presume it would be impossible to deprive the individual of the right of retaining any person he might deem likely to aid him in establishing his case—the knowledge that the assertions made and the opinions mentioned would be subjected to thorough analysis by an independent authority, and would have to be sustained by reasons convincing to persons competent to judge, would undoubtedly prevent much astonishing misstatement and unseemly conflict.

Such advisors being officers of the court, their fees would be payable out of the public treasury in the same way as those of the district attorney; and the voluntary expert who should give skilled assistance on either side could be authorized to receive remuneration at the hands of the retaining parties in exactly the same manner as any other kind of skilled work employed on the case.

ANTIVIVISECTION AGITATION.

A majority of the states possess laws against cruelty to animals, under which possible cases of inhumanity in scientific experiments may be properly dealth with. Notwithstanding this fact, sporadic attempts are made now and then to regulate, restrict or even prohibit the practice of experimenting on living animals. So far such attempts have failed. It is due in part to the lack of such legislation that medicine and biology have had such splendid opportunities in the United States to advance to the very front rank, opportunities which have been utilized wisely and well.

A large truth of this kind can not, however, be grasped by the overzealous, and the latter are now endeavoring to foment an antivivisection agitation in New York and New Jersey. One bill has already been introduced by them into the New York Legislature, while two more are threatened in that state and one in New Jersey. Some of these bills promise to be of an extreme type, and they ought to carry on their faces their defeat; while others profess to be reasonable in their provisions and to satisfy the demands of all rationally humane people. We have received a copy of one of the proposed New York bills, and briefly referred to it in our last issue. Support has been widely sought for it among medical men on the alleged grounds partly of its intrinsic reasonableness and partly of its forestalling more extreme measures. The latter argument should have no weight, for extreme measures are usually least dangerous. The "intrinsic reasonableness" of the bill, moreover, disappears as it is carefully examined, and reflection has convinced us that to endorse it would be a grave error.

In the first place, a bill once introduced is subject to all sorts of possible changes, and there is no more chance of forecasting what it will be like when it comes out of committee than of knowing what a man will be like when he is extricated from a railway wreck. It is much easier to do a thing than to undo it, and, the medical profession once having given the bill its adhesion, all the protests in the world would not undo the mischief wrought thereby.

Secondly, those who are behind this bill must have one of two purposes in mind: either merely a check on supposed abuses, or a stepping-stone toward the total abolition of animal experimentation. In the former case we are convinced that abuses are so few that special legislation is not required. If, on the other hand, the bill is simply a prelude to further legislation leading finally to the abolition of scientific experiments on animals, by approving it we are giving our enemies a vantage ground from which to press on their attacks with greater effectiveness.

The dangers of compromise are vividly illustrated in Great Britain, where medical and surgical progress and medical education have been greatly retarded by the rigidity of the law. Our British professional brethren confess this and never cease to regret that they did not more actively resist this interference with scientific work.

Those who seek to restrict vivisection do not realize what vivisection involves. It means that, in the vast majority of cases, information regarding vital activity is gained from the study of anesthetized animals before human beings are studied. It is a moral obligation on the part of physicians and surgeons, the custodians of the people's lives, that they shall acquire as perfect a knowledge as possible of the working of the living organism. Shall such knowledge be sought at the cost of the lives of human beings or of the lower animals? To assume, moreover, that experimentation on animals as now practiced is cruel and inhumane and therefore needs legislative interference is to assume what is not true. Should a case of abuse occur, let it be treated through the regular channels by which other such cases are dealt with. Because of the possibility of such, however, the imposition of a stigma on the class of conscientious and high-minded men who spend their lives in laboratories in work of the highest and broadest mercy is an unwarranted bit of effrontery, which should be strenuously resisted.

Without going into the details of objections to the

New York bill before us, which would impose uncalled-for restrictions on medical progress, it may be laid down as a general principle that the medical profession should act as a unit in opposing specific antivivisection legislation in any form.

PHYSICIANS AS MAYORS.

In a recent issue of one of the large city dailies appeared an editorial calling attention to the increasing number of physicians who have been elected as mayors of various cities and villages in the fall elections. In New Jersey alone, it is stated, eleven corporate cities elected medical men as mayors. The editor also calls attention to the fact that a similar movement is taking place in England. A list has appeared in an English newspaper of fourteen physicians recently elected as mayors, Dr. Richard Caton, Lord Mayor of Liverpool, being the most conspicuous example. This article also shows that, as a rule, physicians have been successful in this office, one medical incumbent having been elected nine times and another eight times in succession. One borough in Essex is mentioned which had six physicians as mayors in the latter half of the eighteenth century, seventeen during the nineteenth century and three during the first seven years of the present century. The editor considers the tendency decidedly praiseworthy and deserving of encouragement, since, he says, questions of sanitation are becoming of increasing importance in city life and a broadly trained physician can handle them better than the average man, while at the same time he may be as capable in other departments in civic activity. Consideration of this question opens up an attractive field to the successful physician who, at the age of fifty, is willing to retire from active professional work, but does not care to relinquish his hold on active life. Municipal government is becoming more and more a question of good city housekeeping. Sanitation on a large scale is one of the most important factors in the problem. The trained and experienced physician who has executive ability and knowledge of men ought to have an advantage over the average business man as a municipal executive. The field offered is one in which the public-spirited physician can do much good and be of great service to the public without engaging in the distasteful machinations which are necessary to political success in a larger field.

THE CITY AND THE SCHOOL CHILDREN.

An item cabled from Berlin appeared in the newspapers recently, stating that the municipal authorities in that city are facing a serious problem in connection with the food supply of children attending the primary schools of the city. According to the dispatch nearly 12,000 children go to school in the morning without breakfast and, in most cases, without any prospect of a midday meal. Of these, about 5,000 are reported as being cared for by the Children's Canteen Society, a local organization which furnishes meals to school children not otherwise able to obtain them. The other 7,000 children, however, are totally unprovided for. The question of the city's responsibility for these children has been raised by the socialistic members of the municipal council, who propose that the city shall, in the future, see to feeding them. It is estimated that about $38,000 will be required for this purpose during the coming winter. An editorial also appears in one of the city dailies calling attention to the situation in Berlin and also recalling that in England last year a law was actually enacted providing for the feeding of starved or half-starved school children by the school authorities. The editorial says: "The most effective and eloquent argument for public feeding of the children of the poor was made by a leading Tory statesman and a former member of the government. The measure was admitted to be 'radical' and 'paternalistic,' but it was generally felt that it would be a monstrous paradox to force children into public schools and to keep them at work there for six or seven hours a day without asking or caring whether they are physically and mentally able to receive instruction or to benefit by it. Education on an empty stomach is worse than a mockery. In the case of children of a tender age, it is sheer cruelty." The statement given above is interesting as showing the ever-widening character of governmental, and especially of municipal, activities. The German socialist rationally argues that if it is a function of the state to educate the child for the purpose of making him a desirable citizen, it is certainly a function of the state to see that the child receives proper nourishment during his education. If the parents or guardians of the child can give him proper care, well and good; if not, then the state should see that he is properly nourished and given an opportunity for growth, both physical and mental. The importance of adequate nourishment for school children is too obvious to need argument. If not guaranteed to them in any other way, then the state should assume the responsibility.

TROPICAL CLOTHING.

In his well-known book on "The Effects of Tropical Light on White Men," Major Woodruff, of the medical department of the Army, claims that the injurious effect of tropical climates on white men is the result of the action of the chemical or actinic rays of the sun, and that Nature has given the dark races, which normally inhabit the tropics, a protection against these rays in the color screen afforded by their skin pigment. Bearing in mind the use by photographers of a red screen to protect their sensitive plates from these rays, he advocates the use by white men in the tropics of orange, red or black underwear, with a head covering lined with the same color; these with white outer garments to reflect as much of the light rays as possible, he deems the most effective clothing scheme for the tropics. This subject was recently taken up by Sambon,[1] who describes a special fabric which he has devised for tropical use. This material is woven of red, yellow and blue threads in such proportions and in such manner as to present a khaki color on the outside, with red on the inner surface, thus combining exclusion of the actinic

1. Jour. of Trop. Med. and Hyg., Feb. 15, 1907.

sun's rays with such a color on the surface as will render the wearer less conspicuous than would white. An effort now is being made by the Army medical department to test, on a large scale, these proposed methods of protection against the tropical sun. The inspector general of the Army, with the approval of the surgeon general, recommended that at a number of the large posts in the Philippine Islands a certain proportion of the garrison be supplied with orange, red or black underclothing and an orange-lined head covering, all the articles of clothing to be the same as those now issued except for the color. A part of each organization will be equipped with the color screen and a part without it; all the other conditions will be the same, and an opportunity will be afforded for valuable comparative observations. It is hoped that the recommendations will receive the approval of the War Department. Certainly any device which will probably assist our soldiers in the tropics in withstanding the effects of the tropical sun is worthy of careful trial.

PRESENT STATE OF ARMY MEDICAL LEGISLATION.

The latest reports from Washington state that while the Senate Committee on Military Affairs has recently reported favorably on the Army Medical Bill in the form in which it was endorsed by the American Medical Association and the War Department, the Committee on Military Affairs of the House has reported it in an amended form, in apparent disregard of certain important defects which this legislation was directly intended to remedy. The provisions of this bill have been carefully worked out and have been agreed on as just and necessary by all except the Committee on Military Affairs of the House. Briefly, they are intended to secure the following results: 1. An honorable military status for all medical men serving with troops. 2. Enough trained medical men to meet the needs of the Army in time of peace. 3. Such gradual flow of promotion as would render the military service reasonably attractive as a life career for young physicians of good attainments. The bill obviously asks for nothing which is unreasonable; in fact, in respect to its last two objects it asks for nothing which the medical department did not actually possess for a generation prior to the army reorganization act of 1901. In drawing up its provisions for regrading, not a single place was asked for which was not individually demonstrated to be essential in time of peace and as necessary to conform to the accepted general plan for the organization of our Army in time of war. The bill came before Congress as a workable, carefully elaborated scheme of medical organization, and with no unnecessary provisions which could be curtailed without serious detriment to the efficiency of this organization as a whole. Nevertheless, with a desired modest increase of but 125 physicians, and in face of the fact that there are 191 contract surgeons now serving with troops, the House Committee declares that an increase of but 111 medical officers is quite sufficient. Further, it proposes to reduce the number of new places in the higher and better paid grades; that is, to reduce by nearly one-fourth the opportunities of advancement, on which the attractiveness of the service to young physicians must largely depend. The recommendations of the House Committee as regards regradation practically emasculate the medical bill. It would leave the medical department of the future but little better off in this respect than it is at present. As reported from this committee the bill appears to embody a somewhat unwilling and unsatisfactory concession to an overwhelming public opinion.

CHURCH CLINICS.

A "church clinic" has been projected in Chicago, modeled on the one which for about a year has existed in Boston, where Dr. Worcester, the rector of Emanuel Church, and his assistant, Dr. McComb, have sought to apply whatever is beneficent in "faith cures" and "mental healings" to functional ailments, and to eliminate from such therapeutic essays the fraud and quackery which so generally permeate them. Dr. Worcester is, in quite a unique way, well fitted for such an enterprise. Before beginning his ministry he was a college professor of psychology and of the history of philosophy, and his clinics in the Boston church have made manifest their projector's earnest purposes. Unlike the ordinary "worker" in the healing science field, this rector and his assistant have made no claims to perform miracles. They have asked no price for what they may do. They have enlisted the aid of physicians, especially skilled in diagnosis and in neurology, who have in each case made preliminary examinations and have excluded all those having, as the fundamental causes of their sufferings, organic affections and surgical lesions, removable only by radical measures. Throughout these clergymen have evidenced a most temperate and sincere disposition to conform with the altruistic obligations which their Master enjoined on His disciples. In obviously the same spirit Bishop Fallows has established in St. Paul's Reformed Episcopal Church in Chicago a clinic for the cure by "Christian psychology" of such affections as functional nervous disorders, hypochondria, insomnia, nervous dyspepsia, melancholia, hysteria, neurasthenia, drug habits and emotional aberrations. We suggest, by way of parenthesis, that the term "Christian psychology" seems to be ill-chosen, a rather important consideration at the inception of such a movement, for such terminology may invite criticism, essentially inconsequential, but which may nevertheless mar the good influence which it is hoped this enterprise will exert. Bishop Fallows claims to be proceeding on the same lines as Dr. Worcester and is enlisting the services of Chicago physicians to the end that careful elimination of structural lesions shall precede psychic treatment, thus attempting to unite the physician and the clergyman in the great work of healing. This is but harking back to first principles, and is but a re-establishment of primitive conditions, when those men who were peculiarly anxious for the welfare of their fellows united in themselves the offices of both priest and healer. And this principle of combination still obtains in a most useful way, when religious bodies find their influence best exerted when they send medical missionaries to the peoples they are anxious to help. It is to be hoped that this movement may result

in rescuing many neurotics from the depredations of pernicious and ignorant tricksters, and may accord those suffering from overwrought or demoralized psychism a rational, comfortable and effective treatment of their aberrations. If the limitations of this work are appreciated, good and not harm will result.

ANOTHER SURE CURE OFFERED.

Physicians are receiving circulars of a California mining company, offering them easy steps into quackery. On one of the mining claims is a mineral spring, "which furnishes a part of the specific for syphilis. It cures syphilis in from thirty to sixty days, and it leaves the patient's stomach, kidneys and liver in a perfect condition." Shares are now for sale at two and a half cents, and capital is wanted for development. The mineral spring specific announcement prepares one for the side proposition offered. The company has a remedy "for the complete cure of syphilis" and says: "You sell the remedy for $20.00 under positive guarantee to cure syphilis, you hold the money until the patient takes the treatment, and when they are cured you remit us one-half of the $20.00 and keep the other half." Here is a new bait. Is it possible that there are in our profession men sufficiently lacking in common sense to bite.

Medical News

ALABAMA.

Society Meetings.—The Twin City Medical Society was organized December 21 at Decatur, with the object of waging war against tuberculosis; Dr. Frank H. Pettey was elected president; Dr. James F. Myers, vice-president; Dr. J. L. Gunter, secretary-treasurer.——At the annual meeting of the Montgomery County Medical Association, held in Montgomery, December 14, the following officers were elected: Dr. H. P. Wilkinson, president; Dr. William G. Thigpen, vice-president; Dr. Paul S. Mertins, secretary; Dr. Shirley Bragg, treasurer; Dr. Joseph L. Gaston, censor; Dr. Glenn Andrews, county health officer, and Dr. Harry T. Lay, county physician, all of Montgomery.——At the annual meeting of the Jefferson County Medical Society, held in Birmingham, December 23, the following officers were elected: Dr. Lewis Whaley, Birmingham, president; Dr. William F. Black, Sayreton, vice-president; Dr. Arthur F. Toole, Birmingham, secretary-treasurer, and Dr. Dyer F. Talley, Birmingham, censor (re-elected).

GEORGIA.

Wards Opened to Students.—Under the provisions of a resolution adopted December 31 by the trustees of Grady Hospital, Atlanta, medical students from all colleges of Atlanta will be permitted to visit the charity wards of the hospital for bedside teaching.

Personal.—Dr. Charles H. Jones has been elected mayor of Dahlonega.——Drs. Frank R. Carey, Waynesboro, and Thomas H. Hurley, Baltimore, have been added to the staff of Macon Hospital.——Dr. Herbert Respess, Macon, has resigned from the staff of Macon Hospital and will enter general practice.——Dr. Commodore I. Cain, a colored physician of Rome, lost several hundred dollars by a fire in his office January 4.

IDAHO.

Communicable Diseases.—Cases of diphtheria at Meridian are diminishing and the schools have been reopened.——Diphtheria is said to be almost epidemic at Lacrosse.——Several cases of scarlet fever are reported from Wardner.

Unlicensed Practitioner Found Not Guilty.—In the prosecution of "Dr. Raaf," Bellevue, for practicing medicine without a license, although the defendant admitted on the stand that he had been practicing medicine for three years without a license, he was nevertheless declared "not guilty" by the jury.

ILLINOIS.

Addition to Sanitarium.—The annex to Dr. Broughton's Sanitarium, South Rockford, almost completed, is three stories in height, 40x70 feet, and will almost double the capacity.

Money for Hospital.—At the recent minstrel show given by of the Young Men's Club of Evanston, for the benefit of St. Francis' Hospital, about $1,000 was realized for the institution.

Personal.—Dr. John W. Powers, Mount Carroll, has been appointed township physician.——Dr. and Mrs. David Cook, Plano, will celebrate their golden wedding anniversary January 30 at Bakersville, Mo.

Health Board Bill Advances.—On January 18 the bill enabling the State Board of Health to allow medical students who pass a satisfactory examination at the end of four years in an accepted college to practice during the fifth year of study was advanced to third reading in the house.

Contagious Diseases.—Virden reports 150 cases of measles.——Measles is reported at the Illinois Asylum for Feeble-Minded Children, Lincoln, where 18 cases have been found.——At Pleasant Plains, 15 cases of smallpox are reported.——Smallpox is said to be present in 27 communities in 17 counties of the state, and new cases are constantly being reported.——A number of cases of smallpox are reported from Manito.——At Mossville, 4 cases of smallpox of mild type are reported.——The smallpox situation at Kilbourne remains unchanged.——Smallpox is reported to be epidemic east of Dunlap.——At Wallingford 6 cases of smallpox are reported, and at Gibson City 9 cases.——At the University of Illinois there is a smallpox victim, a member of the faculty, and other cases have also occurred in Champaign.

Chicago.

Smallpox.—A case of smallpox was found on the North Side January 15, the ninth case reported thus far this year.

Dr. Hotz Honored.—Dr. Ferdinand C. Hotz was given a complimentary reception and banquet January 13, by the Chicago Ophthalmological Society, which he founded twenty years ago.

Senn Memorial Service.—Services in memory of Dr. Nicholas Senn will be held in the Fine Arts Building, Sunday, February 2, at 2:45 p. m. President James of the University of Illinois will preside.

Service for Medical Students.—A special service for medical students was given at the Church of Epiphany, January 19. The rector, Rev. John Henry Hopkins, D.D., preached on the subject of "Religion and the Sick Room."

High Mortality.—During the week ended January 18 there were 715 deaths reported, 11 less than for the preceding week, but 77 more than for the corresponding week of 1907, the annual death rate being 17.21 per 1,000. Pneumonia caused 124 deaths; tuberculosis, 71; influenza, 56; heart diseases, 51; nephritis, 45; violence (including suicide), 36; cancer, 29; bronchitis and acute intestinal diseases, each 28, and nervous diseases, 27. Scarlet fever and diphtheria were each responsible for 15 deaths; typhoid fever for 9, and measles and whooping cough each for 2.

INDIANA.

The New State Journal.—The *Journal of the Indiana State Medical Association*, devoted to the interests of the medical profession of Indiana, is now issued monthly under the direction of the council, under the charge of Dr. Albert E. Bulson, Jr., editor, and Dr. Ben Perley Weaver, assistant editor, at 219 West Wayne Street, Fort Wayne. Number 1 of Volume 1, dated Jan. 15, 1908, has just been issued, and shows that this publication at once takes a high rank among its contemporaries. It gives evidence of careful preparation and editing, and we are sure that it will take a strong position in the leading of the Indiana profession in every good line of work. The Indiana journal is to be congratulated on its advertising; we fail to note anything objectionable in the sixteen pages in this issue.

KANSAS.

State Society Meeting.—It has been decided that the Kansas State Medical Society will meet in Iola, May 5, 6 and 7.

Contagious Diseases.—The public school of Castleton has been closed on account of the prevalence of diphtheria.——Scarlet fever is said to be prevalent in Erie and the public schools have been closed, and public gatherings and meetings temporarily discontinued.——Smallpox has appeared at Willard, where 9 cases, all of mild type, have appeared.——A case of smallpox was discovered in Topeka, January 1.

KENTUCKY.

Epidemic Diseases.—Measles, chickenpox and pneumonia are said to be prevalent in and around Sharpsburg.——Ashland is reported to have 5 cases of smallpox.——In Glenmore and Richardsville, in the vicinity of and north of Bowling Green, 11 cases of smallpox are reported.

Merger of Medical Schools.—Under an agreement reached more than two months ago, the merger of the Louisville College of Medicine and the Hospital College of Medicine became effective January 1, under the name of the Louisville and Hospital Medical College, Medical Department of the Central University of Kentucky. Dr. Lewis S. McMurtry was elected president; Dr. Clint W. Kelly, dean, and Dr. Walter F. Boggess, associate dean. The building at First and Chestnut Streets will be used for didactic work and that at Preston and Chestnut Streets for dispensary and clinical work.

Personal.—Dr. and Mrs. Joseph M. Mathews, Louisville, leave early next month to spend the remainder of the winter in California.——The Newport board of health has been organized and Dr. James J. Youtsey has been elected president.——At the annual meeting of the staff of Speers Hospital, Dayton, the following officers were elected: President, Dr. William A. Young, Dayton; vice-president, Dr. James J. Youtsey, Newport, and secretary, Dr. Sherwood P. Garrison, Bellevue.——The board of public safety, Louisville, has elected Dr. George B. Jenkins assistant health officer, and Dr. Lewis Ryans, sanitary inspector of the health department.

Fight Against Tuberculosis.—The Kentucky Anti-tuberculosis Society held an exhibit in three stores leased for the purpose, January 10, in which great interest was manifested by both the profession and the public.——Suit has been brought by a resident and property holder in the neighborhood of the site recently purchased for the establishment of the Jefferson County Tuberculosis Sanatorium. The plaintiff pronounces the institution a prospective menace to the neighborhood in which he lives. Among the contentions of the plaintiff are that the drainage of the purchased tract, which adjoins his farm, is toward his place; that the hospital established there would check the neighborhood's prosperity; that the law does not provide that the county shall be represented on the board, which amounts to taxation without representation; that the city is already provided with means for the treatment of tuberculosis, and that the legislation is improvident. An injunction was recently granted restraining the board of safety from erecting a tuberculosis annex to the Louisville Hospital adjoining the property of the next neighbor and it was ordered that the building be placed on the opposite side of the ground. An injunction has since been applied for against the erection of the annex at this point.

MARYLAND.

Illegal Practitioner Paroled.—Albert K. Wolf, indicted by the grand jury on three charges of practicing medicine without a license, is said to have been found guilty and to have been paroled by the criminal court, on his promise to leave the state.

Personal.—Dr. William E. McClanahan has succeeded Dr. Caleb N. Athey as health officer of the Twelfth district, Baltimore County.——Dr. Milner Bortner, Baltimore, is convalescing after an operation for appendicitis.——Dr. Francis G. Goldsborough will return from Vienna March 15.——Dr. Harry Adler has been re-elected president of the Hebrew Hospital.

Illiteracy in Medical Candidates.—Dr. Herbert Harlan, president of the State Board of Medical Examiners, is appalled by the illiteracy shown in some of the examination papers presented by candidates for license to practice medicine. He believes the fault lies in the medical schools, which do not require adequate preliminary training. Large numbers of men are permitted to study medicine who are unable to grasp the problems confronting them in the medical course.

Public Lectures.—The Medical and Chirurgical Faculty of Maryland has arranged for a course of lectures to be delivered in the McCoy Hall of the Johns Hopkins University on Saturday evenings in February and March. The following have been appointed the committee on arrangements: Drs. Gordon Wilson, Jerre W. Lord, Flora Pollack, H. Warren Buckler, Franklin C. Smith, Charles O'Donovan and John Ruhräh. The following is the program:

February 1.—"Ideals of Health in Town and Country; How to Reach and Maintain Them." by Charles O'Donovan.
February 8.—"Eyesight and School Life." by Dr. Hiram Woods.
February 15.—"Tuberculosis." by Dr. William S. Thayer.
February 29.—"Modern School Life and Its Effect on Health," by Dr. H. Warren Buckler.
March 7.—"Preventive Medicine," Dr. William H. Welch.
March 14.—"Milk and Its Relation to Disease," Dr. John Ruhräh.
March 21.—"What the City Does in the Prevention of Disease," Dr. C. Hampton Jones.
March 28.—"Public Water Supplies," Dr. Marshall L. Price.

MASSACHUSETTS.

Bequest to Hospital.—One-third of the estate of the late George A. Bird, Cambridge, amounting to nearly $80,000, is devised to the Holy Ghost Hospital for Incurables.

Rabies.—The Essex North District Medical Society has voted that in view of the increase of rabies during 1907, as compared with 1906, the Massachusetts Medical Society should ask for more stringent laws to aid in the suppression of the spread of the disease.

Contract Work.—At the semi-annual meeting of the North District Medical Society, held in Haverhill, January 8, the committee on contract work reported that it was unprofitable to the physician and people, unethical and undesirable and should be abolished. It recommended that the state society see that steps were taken to put a stop to contract work among the physicians of the city.

Hospital News.—The Vincent Memorial Hospital, Boston, was dedicated with appropriate ceremonies, January 2. Dr. Robert Amery, president of the board of trustees, presided. The hospital is intended for the care of women of small or no means. Provision is made for the treatment of one-half of the patients without charge.——A brick addition to the State Hospital for the Insane Tewkesbury, is to be constructed this year, at a cost of $25,000.

MICHIGAN.

Personal.—Dr. Albert Henwood, health officer of Dowagiac, is ill at his home with smallpox.——Drs. Josiah L. Ambrose, Bay City and John P. Snyder, Auburn, have succeeded Drs. Harvey Gilbert, Bay City, and Ernest A. Wittwer, Auburn, as physicians for the poor in Bay County.——Drs. George B. Lowrie and George P. Cooley, Detroit, have been appointed assistant surgeons for the Michigan Central Railroad.

November Mortality.—During November there were 2,584 deaths reported to the board of health, equivalent to an annual death rate per 1,000 of 12.1. Of the deaths, 1,323 occurred in cities. Of the decedents 414 were children under one year of age; 130 children from 1 to 4 years inclusive, and 723 individuals aged 65 years and over. Pneumonia caused 202 deaths; violence, 182; tuberculosis, 168; cancer, 132; typhoid fever, 63; enteritis of infants, 42; diphtheria, 34; meningitis, 26; scarlet fever, 22; influenza, 16; whooping cough, 13, and measles, 5.

Communicable Diseases.—An outbreak of smallpox in the state prison, Jackson, has caused visits to prisoners, chapel exercises and sightseeing on the grounds to be prohibited.——At Manistee 14 cases of smallpox are reported.——The outbreak of smallpox at Springport is said to have subsided.——Diphtheria is reported in Superior Township.——Typhoid fever is reported epidemic at South Haven.——Four cases of scarlet fever from different sections of the city are reported from Grand Rapids.——Many cases of winter cholera have appeared in Lansing.

Medical Department Reorganized.—The Medical Department of the Michigan National Guard is being reorganized to comply with the regulations provided by the Dick bill, which should become operative January 21.——The following assignments of medical officers have been made: Capt. James E. Mead, Detroit, to Companies E, F, G and K, First Infantry; Lieut. Ernest C. Lee, Detroit, to Companies D, L and M, First Infantry, and Company E, Third Infantry; Lieut. George H. Parmerlee, Detroit, Companies A, B, C and H, First Infantry, and Troop A, Cavalry; Major William T. Dodge, Big Rapids, Companies D, F, I and M, Second Infantry; Capt. Ralph C. Apted, Grand Rapids, Companies B, G, H and K, Second Infantry; Lieut. Howard A. Grube, Coldwater, Companies A, C and L, Second Infantry; Major S. Edwin Cruse, Iron Mountain, Company L, Third Infantry; Captain John V. Frazier, Lapeer, Companies A and C, Third Infantry; Lieut. Floyd H. Randall, Bay City, Companies B, D, H, F and K, Third Infantry; Lieut. Hary R. Haze, Lansing, Company E, Second Infantry, and Battery A, Field Artillery.

MINNESOTA.

State Tuberculosis Sanatorium.—The Minnesota Sanatorium for Consumptives, Walker, of which Dr. Walter J. Marcley is superintendent, was opened January 1, with accommodation for 60 patients. The institution is intended only for the treatment of early cases of pulmonary and laryngeal tuberculosis. The charge for patients is uniform, $7 a week, and county commissioners are authorized to pay this charge for any pa-

tients they send. The balance of the cost is met by an appropriation by the state legislature.

Personal.—Dr. Arnold Schwyzer, St. Paul, has been appointed vice-consul of Switzerland, succeeding Dr. Gottfried Stamm, deceased.——Dr. David A. Kirk, Le Sueur, recently had a cerebral hemorrhage and is in a critical condition.——Dr. George R. Patton, Lake City, has retired after 38 years in the practice of medicine.——Dr. W. H. Smith has been appointed physician for the Cass and Leech Lake Indians, vice Dr. Thomas F. Rodwell, Cass Lake, resigned.——Dr. Lewis L. Mayland, Bagley, has been elected health officer of Clearwater County.——Dr. R. J. Sewell has been elected health commissioner of Cloquet.

Communicable Diseases.—St. Paul is reported to be having an epidemic of influenza.——Hibbing has had about 20 cases of smallpox, all of mild type.——Clarissa reports 30 cases of smallpox, and Browerville 6. The public schools in both places have been closed.——During 1907 there were about four times as many cases of smallpox in the state as in the previous year. ——Mankato reports 2 cases of smallpox.——At Atherton smallpox is reported to be epidemic.——On account of the presence of smallpox at Cass Lake, the school board has passed a resolution compelling vaccination.——Hemorrhagic smallpox was found to be the cause of death of a patient in St. Paul, January 8, and 8 other cases of smallpox are reported in the neighborhood. There seems reasonable cause to believe that the disease was concealed and not reported by the attending physician.

MISSOURI.

Hospital Saturday and Sunday.—The executive committee of the St. Louis Saturday and Sunday Association, at its recent meeting, reported that the total collections from all sources for the year were $34,686.21.

State Board Election.—At the annual meeting of the State Board of Health, held in Jefferson City, January 9, Dr. Albert H. Hamel, De Soto, was elected president; Dr. Ira W. Upshaw, St. Louis, vice-president; Dr. James A. B. Adcock, Warrensburg, secretary.

Smallpox.—It is reported that there are about 60 cases of the disease in Jefferson City.——The schools of Atherton, near Independence, have been closed on account of the prevalence of the disease.——Four cases of smallpox have appeared at the state penitentiary, Jefferson City.——The board of education of Buckner, has ordered all pupils of the public schools to be vaccinated at once, on account of the presence of a large number of cases of smallpox in Fort Osage Township.

Personal.—Dr. Jesse A. Naylor, assistant surgeon of the Emergency Hospital, Kansas City, has resigned. Dr. D. R. Dagg, ambulance surgeon, has been appointed to fill the vacancy.——Dr. William L. Whittington, Jr., superintendent of the Missouri Colony for the Feeble-Minded and Epileptic, Marshall, has resigned.——Dr. Francis J. Sullivan, interne at the St. Louis City Hospital, has gone to England with a deported patient.——Dr. Benjamin H. Smith, St. Joseph, has moved to Long Beach, Cal.

Hospital News.—St. Louis is soon to have a new hospital, the Barnes Hospital, erected on a site opposite Forest Park, between Kings Highway Boulevard and Euclid Avenue.——The Red Cross Emergency Hopital and Free Public Dispensary, St. Joseph, established by the Salvation Army, was opened to the public last month. Dr. William E. Pentz has been appointed chief surgeon. The hospital will have accommodation for 100 patients.——The Burge-Deaconess Hospital is being erected at Springfield. The building will be three stories and basement in height, of brick, 38x100 feet, and will cost about $20,000.

Elections.—At the annual meeting of the St. Louis Medical Society of Missouri, December 28, the following officers were elected: Dr. Herman Tuholske, president; Dr. Cyrus E. Burford, secretary; Drs. Frank R. Fry, Clarence M. Nicholson, Charles J. Orr and Otto A. Wall, councilors for three years; Drs. Paul Y. Tupper, Louis H. Behrens, Albert H. Meisenbach and Algernon S. Barnes, Jr., councilors for two years; Drs. Bransford Lewis, Thomas A. Hopkins, Robert E. Schlueter and John Green, Jr., councilors for one year; Drs. Warren B. Outten, Robert M. Funkhouser, Joseph Grindon, George W. Cale, James M. Ball, Roland Hill and Frank J. Lutz, delegates for two years; Drs. William W. Graves, Davis Forster, Benjamin M. Hypes, Frank L. Henderson, Malvern B. Clopton, William S. Deutsch and William Engelbach, delegates for one year; Drs. Carl Barck, Louis H. Behrens, Louis Rassieur, Albert E. Taussig, Herman L. Nietert, Amand N. Ravold and Bransford Lewis, alternates for two years, and Drs. Walter C. G. Kirchner, William G. Moore, George Homan, Henry C. Dalton, Oscar H. Elbrecht, Robert E. Schleuter and Horace W. Soper, alternates for one year.——Dr. Henry Schwarz has been elected president; Dr. Harry S. Crossen, vice-president; Dr. Davis Forster, secretary, and Dr. Hugo Ehrenfest, treasurer of the Obstetric Section of the St. Louis Medical Society.——The Medical Society of the City Hospital Alumni, St. Louis, held its annual banquet January 1, at which the following newly elected officers were installed: President, Dr. William E. Sauer; vice-president, Dr. Louis H. Hempelmann; secretary, Dr. W. H. Ludde, and treasurer, Dr. E. Lee Dorsett.

NEW JERSEY.

Personal.—Dr. John H. Winslow has been appointed sanitary inspector, and Dr. Charles M. Gray, secretary, of the newly organized board of health of Vineland.——Dr. Herman C. H. Herold has been chosen president of the Newark board of health for the thirteenth executive term. Dr. George L. Warren, the newly appointed member, sat with the board for the first time January 7.——Dr. Robert R. Armstrong, Passaic, has been elected and has qualified as physician of Passaic County.

Improvements Needed for Insane Hospital.—The board of managers of the Morris Plains Insane Hospital have asked for nearly $150,000 this year in addition to $289,675 for maintenance. The first amount is needed for the betterment of the institution. Dr. Britton D. Evans, medical director, strongly recommends the establishment of another institution in New Jersey for the care of the insane. At the close of the year the population of the hospital was 1,824, composed of 917 men and 907 women. There were 417 admissions during the year. Of the patients in the hospital, 1,558 are indigent. The report also shows that the most common exciting cause of mental disease given in the certificates of admission is intemperance, the percentage of these being 11.9 of all admissions.

Urgent Needs of Epileptic Institution.—The annual report of the board of managers of the State Village for Epileptics, Skillman, states that half a million dollars will be required to complete and bring it up to the standard originally intended. The plan, formerly pursued, of erecting the necessary buildings at intervals of two or three years, is not working satisfactorily, as it is more costly and will deprive the people of the state of the benefits of the institution for a long term of years. Among the things asked for are a hospital building to cost about $35,000; an assembly hall, $15,000; a storehouse, $15,000; power house, $12,000; railroad siding, $21.000; double cottages for men and women, $25.000 each; school house and library, $12,000; roads, $10,000; trees and shrubbery, $2,000, and maintenance, $199,300.

NEW MEXICO.

Personal.—Dr. James B. Cutter, for five years in charge of the Santa Fé Hospital, Albuquerque, has resigned, to become chief surgeon of Los Angeles Emergency Hospital and assistant chief surgeon of the Pacific Electric Railway and affiliated lines.

Communicable Diseases.—Several cases of scarlet fever have appeared at Estancia, and the public school has been closed. Similar action has been taken at Willard.——It is reported that 20 deaths from scarlet fever have occurred within the last few weeks in Torreon.——Diphtheria is reported in Mountain Village.——There have been 4 cases of smallpox reported in Albuquerque, and the Savoy Hotel in that place is under quarantine; a number of cases are said to exist in the old town.

NEW YORK.

State Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held January 28 in the common council chamber of the City Hall, Albany, under the presidency of Dr. Frederic C. Curtis, Albany. The annual banquet will be held on the following evening at the Hotel Ten Eyck. Dr. William J. Nellis is chairman of the committee on arrangements.

Attempt to Change Medical Law.—A remarkable bill has been introduced into the legislature by Col. D. C. Robinson of Elmira. This bill, by changing one word of the new medical law, would completely break down the safeguards built by the legislature against admission to the practice of osteopathy of those who have no technical medical education. All this would be effected were the bill passed by substituting the word "or" for "and" in an important sentence.

Anti-Tuberculosis.—The New York Charities Aid Association in cooperation with the State Department of Health will hold a meeting in the campaign against tuberculosis in Albany, January 27. Among those who will speak are Governor Hughes,

Dr. Eugene H. Porter, state commissioner of health; Dr. William H. Welch of Johns Hopkins University, Lieutenant-Governor Chandler and Homer Folke. The money for starting this campaign against tuberculosis throughout the state was contributed by the Russell Sage Foundation, but it is expected that the war in the future will be supported by voluntary contributions.——At a meeting of the New York state executive committee of the International Tuberculosis Congress at Washington, held in the New York Academy of Medicine, it was decided to open communication with the sanatoria and hospitals throughout the state with the object in view of stimulating interest in the International Tuberculosis Congress to be held next September and October.

New York City.

Harvey Society Lecture.—The fifth lecture of the Harvey Society course, delivered by Dr. George W. Crile, Cleveland, at the New York Academy of Medicine January 25, is on the subject of "Shock."

New Counsel for Medical Society.—Deputy Assistant District Attorney Almuth C. Vandiver, who will go out of office on February 1, has been appointed counsel for the county medical society to succeed Champe S. Andrews.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended January 11, 691 cases of measles, with 35 deaths; 562 cases of scarlet fever, with 49 deaths; 432 cases of tuberculosis, with 171 deaths; 370 cases of diphtheria, with 42 deaths; 55 cases of typhoid fever, with 6 deaths; 24 cases of whooping cough, with one death; 16 cases of cerebrospinal meningitis, with 11 deaths; 199 cases of varicella, and 2 cases of smallpox, a total of 2,351 cases and 315 deaths.

Death Rate and Congestion.—A "committee on congestion of the population in New York," composed of delegates from a large number of societies are at work preparing data on the evils incident to crowding among the foreign element in Manhattan. Dr. W. H. Guilfoy, chief of the bureau of vital statistics, finds among the 1,750,000 foreign-born, conditions that account for the halt in the decrease of the death rate of 18.35 per 1,000. One "native American" section of negroes has a death rate of 38.56 per 1,000. Here in one block 5,100 people are packed with a death rate from consumption three and one-half times that of the city as a whole, and only exceeded by that of the Chinese section. One densely populated block designated as "Russian-Polish" has surprised the investigators by its relatively low mortality, and of this section Dr. Guilfoy remarks that the low death rate of the Jewish section can be ascribed to the temperate habits and inherent vitality of the Jew, who is able both to resist and to overcome infection. It is concluded that congestion of itself is an evil, and that attendant evils may be remedied. New York has a birth rate of 30.7 per 1,000 as compared with a birth rate of 22.3 in other cities above 100,000 in the state, and hence its death rate of 18.3 is no worse than a death rate of 15.1 in other cities. An exhibit is to be held in the near future.

NORTH CAROLINA.

Prevalent Diseases.—During December the following diseases were reported to be prevalent in the state: Typhoid fever in 52 counties; pneumonia in 50; diphtheria in 37; scarlet fever in 25; whooping cough in 24; measles in 16; influenza in 7, and smallpox in 10 counties.

Tri-State Society Meeting.—The Tri-State Medical Association of the Carolinas and Virginia will be held in Charlotte, February 18 and 19, under the presidency of Dr. Stuart McGuire, Richmond, Va. Dr. J. Howell Way, Waynesville, is secretary of the association.

Society Meeting.—At the annual meeting of the Robeson County Medical Society, held in Rowland, January 8, the following officers were elected: Dr. Benjamin F. McMillan, Red Spring, president (re-elected); Dr. William E. Evans, Rowland, vice-president; Dr. Arthur B. Croom, Maxton, secretary-treasurer, and Drs. George M. Pate, Rowland, and Arthur B. Croom, delegates to the state society, and Dr. James D. Croom, Maxton, censor.

Personal.—Dr. Charles M. Clodfelder, Lexington, who was seriously injured by falling into an open sewer excavation while making a professional call at night, is recovering.——Dr. Owen Smith, Asheville, has been re-elected vice-president of the Asheville Club.——Dr. Edward C. Register, Charlotte, has returned from Europe.——Dr. William L. Crump, Salisbury, dislocated his shoulder in a runaway accident, January 11.——Dr. Morris M. Caldwell, Wilmington, has been appointed local surgeon of the Seaboard Air Line

OHIO.

Consumptives to be Transferred.—At a meeting of the medical directors of the Cincinnati City Hospital, January 10, it was determined to transfer the tuberculosis patients in the institution to the branch hospital.

State Board Election.—The Ohio State Board of Medical Examination and Registration reorganized at Columbus, January 9, by electing Dr. Augustus Ravogli, Cincinnati, president; Dr. Sylvester M. Sherman, Columbus, vice-president, and Dr. Edward J. Wilson, Columbus, treasurer. Dr. George H. Matson, Columbus, continued as secretary.

Personal.—Dr. Henry D. Belt, Kenton, has been appointed local surgeon of the Toledo & Ohio Central Railroad.——The medical directors of the Cincinnati City Hospital, at a meeting January 3, elected Dr. Louis Schwab president; Dr. Christian R. Holmes, vice-president, and Dr. Asa B. Isham, secretary.——Dr. George Goodhue has been appointed health officer of Dayton, and Dr. Meldrum B. Floyd, city bacteriologist.——Dr. William H. ..nauss has been appointed health officer of Newark.——Dr. Robert R. Black has been appointed medical examiner and Dr. Maxwell J. Davis, health officer of Mansfield.——Dr. Adolphus H. Creps has been appointed physician to the Children's Home, Lima.——Dr. J. C. Reeve, chief of the medical staff of St. Elizabeth's Hospital, Dayton, for thirty years, has resigned.

Contagious Diseases.—Diphtheria broke out in the Salvation Army barracks, Springfield, January 3.——Six cases of diphtheria are reported in one family in Toledo.——Sharon reports 36 cases of typhoid fever.——At Bellevue 3 cases of cerebrospinal meningitis have occurred, with 3 deaths.——The fourth case of cerebrospinal meningitis developed at Columbus barracks January 9.——Three cases of smallpox are reported in Toledo.——A case of smallpox developed January 6 in the county jail, Huntington.——Several cases of varioloid are reported in Hamilton.——On account of a number of cases of smallpox in Marbletown, south of Delphos, the public school has been ordered to be closed.——Influenza is reported to be epidemic in Cleveland and Canton.——An epidemic of measles exists at and around Wilmot, where more than 100 cases are reported.——An epidemic of scarlet fever is reported at New Cumberland.

Physicians Before the Bar of Justice.—John Larmouth, Toledo, charged with practicing medicine without a license, was discharged January 11, the court finding that the medicine had been prescribed by an authorized physician.——The case of the state against C. Elton Blanchard, formerly proprietor of the Emergency Hospital Company, Columbus, was dismissed by the prosecution, January 3, the differences being settled out of court.——Dr. John F. George, Fort Jennings, on trial before the State Board of Examination and Registration, Columbus, on charges of drunkenness, was exonerated by the board.——Dr. James A. Ambrose, Dayton, sentenced to imprisonment of eighteen months for malpractice, and Dr. A. D. Spence, Lebanon, convicted of arson, have commenced to serve their sentences.——Dr. Curtis C. Williams, Niles, is said to have been fined January 9 for infraction of the rules of the board of health of that city in not making report of the death of a patient whom he attended at Warren some time ago.

PENNSYLVANIA.

Diphtheria Epidemic.—The town of Jefferson has been placed under strict quarantine, owing to an epidemic of diphtheria. There have been but two deaths, but new cases are reported daily.

Personal.—Dr. Wharton Sinkler, Philadelphia, has been elected one of the managers of the Episcopal Hospital.——Dr. Carleon Warner, Narberth, sailed January 9 for Vienna.——Dr. Damon Pfeiffer, Williamstown, is ill with typhoid fever in the German Hospital, Philadelphia.

Mail Clerks Vaccinated.—A general order has been issued by the bureau of health of Pittsburg, requiring all railway mail clerks to be vaccinated. The order results from three clerks contracting smallpox. The dormitories in the Federal Building have been thoroughly fumigated.

Philadelphia.

Hospital Report.—The report of the Methodist Hospital for December shows that 114 new patients were admitted to the wards; 47 new patients were treated in the dispensary, and a total of 1,867 visits were made to various outdoor departments.

Obstetricians Elect.—The Obstetrical Society of Philadelphia has elected the following officers: President, Dr. James M. Baldy; vice-presidents, Drs. Daniel Longaker and George M.

Boyd; secretary, Dr. Frank C. Hammond; treasurer, Dr. John W. West; curator, Dr. Brooke M. Anspach; council, Drs. Stricker Coles, Melvin M. Franklin, Levi J. Hammond, and John C. Da Costa; publication committee, Drs. William E. Parks, Theodore A. Erck, Stricker Coles and John G. Clark, and library committee, Drs. Daniel Longaker and William R. Nicholson.

Training in Medical Organization.—The students of the University of Pennsylvania, Department of Medicine, have formed an association, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is closely modeled. The various student associations follow the plan of the state organization and elect members to a house of delegates which transacts the business of the association. An annual meeting is held, at which papers are read by chosen members, thus encouraging original research and scientific support. The organization is named the "Undergraduate Medical Association of the University of Pennsylvania," and already has over 250 members. At the first meeting, to be held April 8, ten papers will be read on various medical subjects. The faculty will give a midday luncheon and there will be a banquet in the evening, attended by at least 200 students and invited guests.

Health Report.—The total number of deaths reported for the week ended January 11 was 705, which is the highest mortality since the week ended March 12, 1904, when four more deaths were recorded. This rate shows an increase of 17 over the previous week and an increase of 59 over the corresponding week of 1907. The principal causes of death were: Typhoid fever, 14; diphtheria, 6; influenza, 34; consumption, 69; cancer, 28; diabetes, 5; apoplexy, 20; paralysis, 8; heart disease, 78; acute respiratory diseases, 181; enteritis, 16; cirrhosis of the liver, 6; acute nephritis, 5; premature birth, 12; congenital debility, 15; old age, 9; suicide, 4; accidents, 20; Bright's disease, 49, and marasmus, 3. There were 266 cases of contagious diseases reported, with 21 deaths, as compared with 270 cases and 26 deaths in the preceding week.——The deaths for the week ended January 18 was 657, a decrease of 48 from those reported in the previous week and an increase of 11 over the number reported in the corresponding week of 1907. The principal causes of death were: Typhoid fever 21; diphtheria, 8; influenza. 28; cerebrospinal meningitis, 5; consumption, 70; cancer, 22; diabetes, 5; apoplexy, 17; paralysis, 11; heart disease, 59; acute respiratory diseases. 129; enteritis, 12; cirrhosis, 8; appendicitis, 5; acute nephritis, 7; Bright's disease, 44; premature birth, 22; congenital debility, 8; old age. 7; suicide, 4; accidents. 24, and marasmus. 3. There were 266 cases of contagious diseases reported, with 32 deaths, as compared with 266 cases and 21 deaths reported in the preceding week.

TENNESSEE.

Epidemic Diseases.—Influenza is reported to be epidemic in Trenton.——Williamson County reports 4 cases of smallpox and Sumner County 2 cases.——The smallpox situation in Madison County and Jackson is becoming serious, as 28 cases have been reported in the district.——At West Point 6 new cases of smallpox were reported January 7, making 13 in all. ——At a meeting of the State Board of Health January 7, the secretary stated that since the last semiannual meeting of the board there had been 108 smallpox cases in the state in 12 counties. Of the patients 64 were white and 44 colored.—— The school at Liberty Grove, near Jackson, has been closed on account of smallpox.

State Anti-Tuberculosis Committee.—The anti-tuberculosis committee for Tennessee held a meeting January 8, in Nashville. and elected the following officers: President, Dr. Heber C. Jones, Memphis; vice-presidents, Drs. William Krauss, Memphis; Richard Douglas, Nashville; S. Rush Miller, Knoxville, and secretary-treasurer, Dr. James A. Albright, Somerville.

TEXAS.

Personal.—Dr. Renne Hudelle, Dallas, has resigned from the State Health Department, to take effect January 1.——Dr. Edward M. Thomas, Georgetown, has been appointed health officer, vice Dr. J. H. N. Huggins, resigned.

Epidemic Diseases.—El Paso is reported to be suffering from an epidemic of influenza.——Greenville reports 8 or 10 cases of scarlet fever with one death.——More than 100 cases of measles are reported in Howe.——Measles is epidemic in Smithville.——The health officer of Georgetown reports 20 or more cases of smallpox in and around Georgetown, all of mild type; also 8 cases near Bartlett.——The epidemic of diphtheria at Elgin is reported to have subsided.

VIRGINIA.

Bequest to Hospital.—Alexandria Hospital has been bequeathed $1,000 by the will of the late William H. Lambert.

Smallpox.—Smallpox is reported to have been epidemic at Norton for several weeks and 4 cases have developed at Kingsport.

Hospital Notes.—The King's Daughters Memorial Hospital is to be erected at Bristol at a cost of from $25,000 to $30,000. ——Practically the entire medical profession of Richmond has endorsed the reorganization of the medical staff of the City Home. They plan a volunteer medical and surgical staff at the home.

Tuberculosis Exhibit.—The exhibit of the National Association for the Prevention and Study of Tuberculosis was made in Richmond from December 17 to 24 inclusive. In addition, three popular lectures a day were given by physicians of the city, bearing on the various phases of the prevention and treatment of the disease.

November Mortality.—During November there were 155 deaths in Richmond, 141 among residents and 41 among nonresidents, equivalent to an annual death rate per 1,000 of 16.77. The number of deaths was 60 less than in October. Among the chief causes of death were: Consumption, 21; pneumonia, 16; cerebral hemorrhage, 11, and nephritis and valvular heart disease, each 10.

Personal.—Dr. Benjamin M. Atkinson, for 28 years superintendent of the Virginia School for the Deaf, Dumb and Blind, Staunton, has resigned and Dr. John B. Catlett has been elected his successor.——Dr. Robert L. Corbell, Portsmouth, has been re-elected health officer of Norfolk County, Dr. H. H. Drewry, Norfolk, assistant health officer, and Dr. F. L. Sawyer, physician to the county almshouse.——Dr. K. T. Francis has been appointed first lieutenant and assistant surgeon of the Richmond Howitzers.——Dr. R. W. Crawford, Strasburg, has succeeded Dr. E. B. Quillan as superintendent of the Atlantic Coast Railroad Hospital, Rock Mount, N. C.

WASHINGTON.

Contagious Diseases.—Dr. Matthew B. Grieve, health officer of Spokane, reports that 20 cases of smallpox were recently taken to the Isolation Hospital in a single week. He also reported 21 cases of diphtheria in the city.——Smallpox on the Lummi Island Reservation was reported to the county health officer, Dr. Caleb E. Martin, Bellingham.

Personal.—Dr. Edwin L. Kimball, Spokane, has been appointed a member of the State Board of Health and Vital Statistics, vice Dr. John M. Semple, made superintendent of the Eastern Washington Hospital for the Insane, Medical Lake. ——Dr. Elmer E. Heg, Seattle, secretary of the State Board of Health, returned from Europe, January 2.——Dr. G. V. Calhoun, Seattle, is critically ill at his home.——Dr. Albert P. Duryee has been appointed health officer of Everett.

Society Meetings.—The Spokane County Medical Society at its annual meeting elected the following officers: President, Dr. Wallace W. Potter; vice-presidents, Drs. John G. Cunningham and Matthew B. Grieve; secretary, Dr. Carroll L. Smith; treasurer, Dr. Frank Rose, and censors, Drs. Charles S. Kalb, Wilbur W. MacKenzie and Harold H. McCarthy.——At the annual meeting of the Lincoln County Medical Association, held in Davenport, December 4, the following officers were elected: President, Dr. A. D. Snyder, Creston; Dr. Lee Ganson, Odessa, vice-president; Dr. L. F. Wagoner, Harrington, secretary-treasurer, and Dr. Rufus P. Moore, Davenport, censor.

Illegal Practitioners Punished.—B. C. Pollman, an osteopath of Bellingham, charged with practicing medicine without a license, is said to have been found guilty December 30 and fined $75.——In the case of Aubrey T. Dodson, Spokane, charged with practicing medicine without a license, the jury is said to have returned a verdict of guilty. In the police court the defendant had been sentenced to pay a fine of $50 and took an appeal to the Superior Court.——H. C. Karnopp, Spokane, who was prosecuted by the state medical society for practicing medicine without a license, is said to have been fined $50 by Justice Hinkle. He pleaded guilty and said that he would remove the sign "Dr." from his windows.

Hospital News.—The new Sisters of Providence Hospital, Seattle, is to be erected on the recently acquired location at Seventeenth Avenue and Jefferson Street. The new hospital will cost, with the site, more than $1,000,000. The building is to be 305 feet long and six stories in height; there will be no public wards, as practically all the space will be devoted to private rooms.——The new Sacred Heart Hospital, to be

located in Spokane, will cost about $400,000 and will accommodate about 300 patients. The building will have a frontage of 330 feet and a depth of 58 feet and will be of brick and ornamental stone and six stories in height.——The new hospital erected under the auspices of the Dominican Sisters at Chehalis was opened last month. The building is 100 x 48 feet, four stories high and cost $30,000.——The Emergency Hospital in the basement of the City Hall, Spokane, has been equipped with four beds and is under the charge of Dr. B. H. Roark.——The board of health of Seattle is contemplating the erection of an isolation hospital, and $2,800 has been appropriated for the site.

WISCONSIN.

Healer Fined.—John Till, a "healer" of Somerset, said to have pleaded guilty to a charge of practicing medicine without a license, was fined $50, paid the fine and agreed to move out of Wisconsin.

Election.—At the annual meeting of the Milwaukee County Medical Society, the following officers were elected: President, Dr. Henry V. Ogden; vice-president, Dr. William H. Washburn; secretary, Dr. Alfred W. Gray, and treasurer, Dr. Joseph Kahn.

State Sanatorium.—The Wisconsin State Sanatorium, near Wales, for the care and treatment of tuberculosis, which was opened in November, has now facilities to care for 80 patients. Dr. Chester A. Paull is superintendent, and $120,000 has been expended on the institution.

Violation of Vital Statistics Law.—Dr. Horace M. Brown, Milwaukee, to test the validity of the law requiring physicians to re-register, was convicted of having failed to register in the health department and also of having failed to properly report a birth. In order to appeal to a higher court, Dr. Brown submitted to a fine of $20 and costs.

GENERAL.

Not Authorized to Represent Journal.—Mr. P. W. Corzilius, who formerly represented THE JOURNAL and who was in Washington, D. C., recently, is no longer in the employ of the Association and is not authorized to make collections.

Typhoid Fever in Porto Rico.—An epidemic of typhoid fever is reported in Caguas, Porto Rico, where 125 cases are said to exist in the city and a number of cases in the suburbs. Governor Post has inspected the district, and ordered the expenditure of $5,000 for temporary hospitals and the segregation of the sick.

Yellow Fever in Cuba.—It is reported from Cienfuegos that a death from yellow fever occurred in that city January 3, but that no new case of yellow fever or other quarantinable disease has been reported during the week.——Yellow fever appeared in Havana province December 18, and the patient died December 27.——No new case of yellow fever has been reported in Matanzas district.——No quarantinable disease is reported from Santiago.

Cholera in the Philippines.—During the week ended November 2, 4 cases of cholera, all fatal, were reported in Manila, which compares favorably with 21 cases reported during the preceding week.——A few cases have been reported from Bocaye and Calumpit, the infection of which was traceable to Manila.——During the week ended November 9, 13 cases of cholera were reported in Manila, and 14 deaths from that disease——Cholera is reported among the troops in Mindanao. One death occurred January 16.

CANADA.

Hospital News.—A new general hospital has just been opened at Selkirk, Man., at a cost of $25,000. The building contains four private wards, three semi-private wards and two public wards, capable of accommodating in all 25 patients. ——The executive of the Canadian Hospital Association has decided to hold the annual meeting in the Ontario Parliament buildings, Toronto, on Easter Monday and Tuesday, 1908. The president is Miss Louisa Brent, superintendent of the Hospital for Sick Children, Toronto.

Winnipeg Vital Statistics.—The death rate in Winnipeg for 1907 was 12.6 per 1,000 of population. This is the lowest since the incorporation of the city. In 1906 the rate was 15.9, and in 1905 the rate was 20.5 per 1,000. The total number of deaths in 1907 was 1,455; in 1906, 1,609, and in 1905, 1,622. The births in 1907 were 3,323, more than double the number of deaths. The active campaign of the health department for the last three years has had much to do with the decrease in the death rate, as there have been fewer cases of and deaths from typhoid fever. There were 380 cases of typhoid fever reported in 1907 as against 1,174 in 1906, and 1,699 in 1905.

MEXICO.

Sentence Commuted.—Dr. C. S. Harle, Chihuahua, sentenced to death for the murder of two Americans in order to collect their life insurance, has been commuted to imprisonment for twenty years.

International Medical Association.—The International Medical Association of Mexico held its annual meeting at Monterey, Nueva Leon, January 23-25, under the presidency of Dr. H. V. Jackson, Durango.

Prevalent Diseases.—A serious epidemic of diphtheria is reported in Cruces, state of Chihuahua.——Smallpox continues prevalent in the vicinity of Molino de Enmedio.——The epidemic of smallpox at Santa Ana continues.——A considerable increase in leprosy has been discovered at Xochimilco, from which point come most of the lepers under treatment at the Juarez Hospital.

Hospital Notes.—The City of Puebla is about to erect a new hospital at Agua Azul at a cost of $800,000.——On December 31 the Charity Hospital of the City of Mexico was opened, with accommodation for 10 patients. Dr. Antonio Loaza is director of the institution.——The charity ball recently held in the City of Mexico for the benefit of the American Hospital netted more than $10,000 to that institution.

Sanitary Congress.—The third International Sanitary Convention, held in the City of Mexico, adjourned December 1, to meet in San José, Costa Rica, in December, 1909. Dr. Juan Jose Ulloa of Costa Rica was elected president. The advisory council made the following recommendations, which were approved by the convention:

1. The representatives of the governments of Brazil, Columbia and Uruguay are requested to adhere to the sanitary convention signed in Washington in 1905.
2. The codifying of all sanitary laws and regulations is recommended and the forwarding of copies of same to the International Sanitary Board at Washington.
3. It is recommended that the International Sanitary Board at Washington be authorized to establish relations with the International Sanitary Board at Paris in accordance with the declaration made at the Third Pan-American Congress in 1906.
4. The secretary was authorized to include in the publications of the convention, a summary of the resolutions adopted by the first and second international conventions held in Washington.

The following recommendations, also offered, apply to the American governments concerned in the convention. They are here given in summarized form:

1. Compulsory vaccination against smallpox.
2. Quinin, fine wire netting, crude petroleum, mosquito bar, etc., to be free from taxation.
3. A most active propaganda on etiology, prophylaxis and the treatment of malaria.
4. Mortality from malaria to be included in the public health reports.
5. Publishing of pamphlets for distribution to the public concerning malaria.
6. Legal and active steps for the nationalization and centralization of sanitary authorities.
7. Suggestions for the prevention of tuberculosis in cars and steamers. Avoidance of carpets and fixed curtains: the use of spittoons; periodical disinfection of cars; disinfection of dining-room service; the use of paper napkins and the screening of food; the examination of employés, steamers and passenger trains; establishment of a department for tuberculosis patients on steamers. Posting of public notices condemning spitting on floors; physicians on the frontier to have special knowledge of the prophylaxis of tuberculosis.

FOREIGN.

Neisser Returns from East Indies.—Prof. Albert Neisser has returned to his post in Breslau in good health after his long stay at Batavia for research on syphilis in monkeys. He will deliver an address on the present status of the pathology and treatment of syphilis at the approaching German Congress of Internal Medicine at Vienna, opening April 6.

A Medical School for Missionaries.—A missionary medical institute has been organized at Tübingen to train physicians for the missionary field, especially in the treatment of the diseases likely to be encountered in the tropics. Dr. Fiebig has been appointed director of the new school, his experience as a military medical officer in the Dutch colonies eminently qualifying him for the post.

Free Dentistry for School Children.—The town of Charlottenburg, near Berlin, has decided to open a dental office for the children of the public schools, and has appropriated about $2,150 for the installation and $3,000 for the current expenses. The number of children tributary to the office is said to be 23,500. A dozen members of the local dentists' association have agreed to do the dental work required.

Hungarian Medical Press.—We learn from an exchange that the editors of the Hungarian medical journals have united in a national organization to promote the interests of the medi-

cal press of the country and of the profession in general. The association has also joined the International Association of the Medical Press. Prof. M. Lenhossek is president of the new national body, and T. Györy is secretary, both of Budapest.

Memorial to Pirogoff.—The twenty-fifth anniversary of the death of the Russian surgeon Pirogoff has been celebrated by conferring his name on a street and hospital at St. Petersburg and endowing an annual prize for works on surgery. Moscow has now fallen into line and renamed a street and a hospital in his honor, and has also founded a Pirogoff prize.

Bust of von Bergmann Presented to His Former Clinic.—A life-size bronze bust of the late Professor von Bergmann was presented last month to the clinic, the scene of his surgical triumphs, by his former pupils, many of whom now occupy prominent positions in other clinics. The bust stands beside those of Gräfe, Dieffenbach and Langenbeck. Professor Bier, the present chief of the clinic, and Professor Sonnenburg delivered addresses.

Medal Presented to Professor Gilbert of Paris.—The friends of Professor Gilbert, on the occasion of his election to the Academy of Medicine, presented him with a medal engraved by a prominent artist. One side of the medal depicts a scene at the Broussais Hospital with Gilbert seated at a table covered with microscopes and tubes, surrounded by his pupils. His specialty is diseases of the liver and stomach, and the reverse of the medal gives his portrait in profile with the inscription *E jecore decus*, "From the liver, honors flow to him."

Eleventh International Congress of Ophthalmology.—Elaborate preparations are being made for this congress, which is to convene at Naples April 2-7, 1909. Professor Angelucci is president of the Organization Committee, which consists of forty-eight members, including Albertotti and Trombetta. The corresponding members for the United States are Dr. G. E. de Schweinitz, 1705 Walnut street, Philadelphia, and Dr. Hermann Knapp, 26 West Fortieth street, New York. The principal themes to be discussed at the congress are announced as "Amount of Indemnity to Be Paid for Lost or Damaged Eye" and "Unification of the Measure of the Visible Force and of the Notation of the Meridians of the Astigmatism."

Damages for Venereal Infection.—The Vienna *Klin.-therap. Wochschr.* relates that a girl sued a man for $1,600 damages on account of infection from venereal disease, claiming this amount for the pain, the expenses of treatment and indemnity for reduced chances of getting married. The accused denied the possibility of contagion as, although he had contracted venereal disease eight years before, he had been thoroughly treated and had been perfectly healthy during the last few years. The court admitted the possibility of his having conferred the infection but divided the responsibility and awarded half the amount claimed. On appeal, the higher court confirmed the decision to a certain point, but would not accept the division of the responsibility, assuming that the defendant was alone responsible. It also refused the damages claimed for reduced prospects of matrimony, and thus imposed damages of $500 for the pain and about $246 for the expenses of treatment.

Medical Congresses in Europe This Year.—The German Congress for Internal Medicine is to be held at Vienna, April 6-9, the principal subjects to be discussed being "Relations of the Female Sexual Organs to Internal Affections" and "Modern Methods of Investigating the Functions of the Intestines." Neisser will tell of his experimental research on syphilis in monkeys, and Fischler will relate the results of his experimental cirrhosis of the liver. April will also witness the Fourth International Congress for Climatotherapy and Hygiene of Cities, Biarritz; also the International Congress of Laryngology and Rhinology at Vienna, April 22-25. The German Congress for Psychiatry will convene at Berlin, April 24-25, as also the German Congresses for Surgery, Orthopedic Surgery and Roentgen Work. In June, at Frankfurt a. M., an International First Aid Congress is to be held for the first time, and the tenth German Congress of Dermatology follows a week later at the same place. The German Congress of Otology will meet in September at Heidelberg. The French congresses convene mostly in the fall. The French Congress of Internal Medicine is to meet at Geneva, September 3-5, to discuss arteriosclerosis, pathogenesis of neurasthenia and treatment of gallstone affections. In September, also, the Seventh International Congress of Dermatology convenes at Rome, and the Second International Congress of Surgery at Brussels. The German neurologists assemble at Heidelberg in October for their annual meeting. In October the First International Congress of Urology is to meet at Paris, as also the Twenty-first French Congress of Surgery. The French Congress of Neurologists and Alienists is also held in the fall. The Italian medical, surgical and pediatric congresses generally meet in October. The Italian Congress for Internal Medicine will convene at Rome in October. The subjects to be discussed are "Cardiac Arrhythmia," "Family Neuropathies," "The Results of Superalimentation," "Modern Therapeutics of Gastrointestinal Affections," and "Diagnostic Importance of Roentgen Rays in Internal Medicine."

LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, Jan. 11, 1908.

Australian Snakes.

Dr. W. G. Watson, Sydney, New South Wales, has recently made an interesting report on the venomous snakes of that colony. Although there are some very venomous ones, the death roll during the past fifteen years has averaged only four or five per annum, and in a total of 190 cases of snakebite the death rate was only 16.3 per cent. Five species are included in the category of "deadly snakes"—the death adder, the tiger snake, the black snake, the brown snake and the superb snake. Most bites occur during the hot months. Dr. Tidswell, the author of "Researches on Australian Venoms, Snakebites, Snake Venom and Antivenene," thinks that there is no proof that strychnin exercises any beneficial influence, and that "the antivenins hitherto obtained were effective only against the venoms with which they were prepared, so that a separate serum is necessary for every kind of snake venom. Thus snakebite is for the moment beyond the sphere of practical serotherapy." He condemns the administration of large quantities of alcohol, which is the popular treatment, and considers that the lay treatment should be confined to application of a ligature followed by scarification and sucking of the bite, or to excision, when a ligature can not be applied, and to the administration of small quantities of stimulants when the patient is faint.

The London County Council and the Milk Supply.

The London County Council is seeking to amend the act of 1885 relating to milk supply. It recommends the following alterations: 1. No dairyman shall occupy any premises as a dairy until he has satisfied the council as to the condition and suitability of the premises; such premises shall be occupied as a dairy only so long as they are maintained in a proper condition; a fresh approval shall be required if the premises are vacated for a period exceeding three months. 2. Plans of all premises proposed to be used as dairies shall be submitted to the council. 3. Appliances for washing and their use, so that the person of the milker may be cleansed before each milking, shall be necessary; the milker shall wear a clean overall; the cows shall be regularly groomed and their teats and udders kept in a clean condition. 4. A proper place shall be provided for storing and cleansing utensils. 5. The use for sleeping purposes of any room communicating with a milk shop or store shall be prohibited.

Pharmacology

CHINOSOL.

Report by the Council on Its Chemical Nature and Antiseptic Power.

The following report was submitted to the Council by a subcommittee:

To the Council:—In advertising circulars sent to physicians by the Parmele Pharmacal Company, New York, Chinosol is stated to be:

"A most remarkable antiseptic, germicide, disinfectant and deodorizer. Perfectly safe for external use, perfectly safe (in proper dosage) for internal use. Free from the dangers of poisoning, yet far more prompt and efficient than carbolic acid, corrosive sublimate, lysol, formol, creolin, saprol, or any other product thus far discovered. Most effective, yet least expensive."

NOT FREE FROM DANGER OF POISONING.

The claim that Chinosol is free from dangers of poisoning has recently been questioned by T. Weyl (*Viertel Jahrschft. f. gerichl. Med.*, xxxiv, No. 3). His experiments on rabbits showed that very similar symptoms and lesions are produced by Chinosol, lysol and cresol. After poisoning by lysol the mucous membrane of the stomach shows, according to the dose, all stages of acute inflammation, even to the destruction of the mucous membrane with exudation of blood. Chinosol does not produce this injury to the mucous membrane. Cresol pro-

duces the same effects as lysol. Cresol injected subcutaneously appears to be absorbed with difficulty, hence its action is uncertain and the fatal dose larger than with the other two.

Weyl concludes as follows: Chinosol, when given by the stomach, is as poisonous for rabbits as lysol, if not more so; given subcutaneously it is 100 per cent. more poisonous, but when absorbed from the peritoneum it is 50 per cent. less poisonous than lysol.

TESTS OF BACTERICIDAL POWER.

The statements made in regard to the efficiency of Chinosol being extravagant, experiments were undertaken to determine whether or not these claims were justified, and the following is the report of the bacteriologist:

> Under my directions tests were made with two organisms, *Staphylococcus pyogenes aureus* and *B. typhosus*. These organisms were selected for the reason that they are mentioned repeatedly in the circular accompanying the preparation. The first series of tests were made for the purpose of demonstrating the antiseptic or preservative action of Chinosol. For this purpose, solutions of Chinosol of varying strengths in neutral bouillon were inoculated with the test organisms and the presence or absence of growth after a period of incubation of at least four days was noted. The results of these tests as shown from the table confirm the statements made in the circular that Chinosol in a strength of 1 to 15,000, 1 to 4,000 and 1 to 200,000 arrests or prevents the growth of *S. p. aureus*. The antiseptic action with reference to the typhoid bacillus is not as pronounced since a good growth was obtained in bouillon containing 1 to 20,000 of Chinosol. The statement in the circular that, according to Vogelius, the typhoid bacillus ceases to grow in a Chinosol solution of 1 to 20,000 is not confirmed, but this difference in results may well be due to varying experimental conditions.
>
> The results given in Table 1 show that Chinosol does possess considerable antiseptic action and that in this respect it is superior to carbolic acid. On this point the statements in the circular are essentially correct. It is necessary, however, to draw a sharp line of distinction between the antiseptic or preservative action and the disinfecting or germicidal value. A substance may be a good preservative, but a very poor disinfectant, and such is the case with Chinosol. The germicidal action of Chinosol was tested on only *S. p. aureus* and *B. typhosus* and the results are not in accord with those ascribed to Palatschenko. Thus, while the circular sent out by the Parmele Pharmacal Company states that he found Chinosol solution 1 to 3,000 killed typhoid bacilli in one and one-half hours, it will be seen from tests given in Table 4 that 1 to 100 did not kill this organism in one hour.
>
> The further statement in the circular that typhoid bacilli were destroyed in fifteen minutes with a Chinosol solution of 1 to 1,000, whereas carbolic acid was without any result is not substantiated by these tests since a carbolic acid solution of 1 to 100 has distinctly more injurious action than Chinosol in like concentration (Table 4).
>
> The extravagant claims that Chinosol is five times as efficient as corrosive sublimate and 100 times as efficient as carbolic acid in destroying the pus organism can not be upheld. On the contrary, it is inferior to either of these agents. Similarly, the statement that *S. p. aureus* is killed by Chinosol 1 to 4,000 in fifteen minutes is offset by the fact that solutions of 1 to 200, 1 to 500 and 1 to 1,000 were without any germicidal action even at the end of one hour, when thick suspensions of the test organism were used (Table 2).

TABLE 1.—PRESERVATIVE ACTION OF CHINOSOL AND CARBOLIC ACID.[1]

	Chinosol.		Carbolic acid.	
	S. P. aureus.	B. typhosus.	S. P. aureus.	B. typhosus.
1 to 5,000	—	—	+	+
1 to 10,000	—	—	+	+
1 to 20,000	—	+	+	+
1 to 40,000	—	+	+	+
1 to 200,000	—	+	+	+

1. In the tables the sign + indicates a heavy growth, +* a slight growth, and — means no growth.

TABLE 2.—GERMICIDAL ACTION ON S. P. AUREUS (THICK SUSPENSION).

	Chinosol.			Mercuric chlorid.	Carbolic acid.
	1 to 200.	1 to 500.	1 to 1,000.	1 to 1,000.	1 to 100.
5 min.	+	+	+	—	+
15 min.	+	+	+	—	+
30 min.	+	+	+	—	—
60 min.	+	+	+	—	—

TABLE 3.—GERMICIDAL ACTION ON S. P. AUREUS (THIN SUSPENSION).

	Chinosol.		Carbolic acid.
	1 to 100.	1 to 200.	1 to 100.
5 min.	—	—	—
15 min.	—	—	—
30 min.	—	—	—
60 min.	—	—	—

TABLE 4.—GERMICIDAL ACTION ON B. TYPHOSUS (THIN SUSPENSION).

	Chinosol.		Carbolic acid.
	1 to 100.	1 to 200.	1 to 100.
5 min.	+	+	+*
15 min.	+	+	+*
30 min.	+	+	+*
60 min.	+	+	+*

ANTISEPTIC POWER OVERSTATED.

This examination shows that the inference that Chinosol prevents the growth of all organisms because of its marked action in the case of *Staphylococcus* is not justifiable. Neither is the assumption warranted that it possesses extraordinary germicidal action because of its preventive properties in this one instance. As a matter of fact, it appears to be a poor germicidal agent, and the statements regarding its superiority over carbolic acid and mercuric chlorid are exaggerated, to say the least.

CHEMICAL COMPOSITION QUESTIONED.

When about ten years ago Chinosol was exploited in Germany investigation showed that it did not possess the composition which the manufacturers claimed. While it was stated to be "potassium oxychinolin sulphonate," chemical examination demonstrated that it was a double salt or a mixture of oxychinolin sulphate and potassium sulphate (Fraenkel, *Arzneimittel Synthese*, second edition, page 536, *Ztschr. physiol. Chem.*, 28, 439 from *Chem. Centrbl.*, 1900, 1, 50; and *Arb. Kais. Gesundheitsamt*, 15, 288, from *Chem. Centrbl.*, 1899, 2, 396).

It is therefore recommended that Chinosol be refused recognition until the advertised literature be modified to agree with the facts, and that this report be published to call attention to the extravagant claims made for the product.

It is further recommended that a chemical examination of Chinosol be made with the view of determining the chemical composition of this article as now on the American market.

The above report was adopted by the Council, and in accordance with the recommendation, it is herewith published.

CHEMICAL COMPOSITION MISSTATED.

In accordance with the recommendation also, specimens of Chinosol, in powdered form, were purchased in the open market and submitted to our chemists for examination. They report as follows, first giving an abstract of the investigations made abroad:

"In *Arbeiten aus dem Kaiserlichen Gesundheitsamte*, xv 288, 301 (*Chem. Centrbl.*, 1899, ii, p. 396), it is stated that chemical examinations show that Chinosol is a mixture of oxychinolin sulphate and potassium sulphate.

"Brahm, working in the physiologic institute of the University of Berlin, found that after the ingestion of Chinosol, oxychinolin glycuronic acid was present in the urine, and from this fact he concludes that oxychinolin is liberated from Chinosol in the body. As this is a direct contradiction to the action of sulphonates in the mammalian organism, he believes that Chinosol is not a sulphonate, but simply a mixture of oxychinolin sulphate and potassium sulphate. This fact Brahm confirmed by further experiments. He found that on addition of barium chlorid to sulphonates and ethereal-sulphuric acids, no barium sulphate is precipitated, whereas in the case of Chinosol a heavy precipitate of barium sulphate is obtained. It is also found that on washing Chinosol with absolute alcohol potassium sulphate is left undissolved and oxychinolin sulphate passes into the filtrate and can be recov-

ered by evaporating the alcoholic solution. By the aid of the microscope further evidence is given that Chinosol is merely a mixture, for by carefully evaporating on a slide a drop of Chinosol solution, characteristic crystals of potassium sulphate appear. With these results as a basis Brahm concludes that Chinosol can not be a sulphonate as claimed by the manufacturers, but is a mixture of oxychinolin sulphate and potassium sulphate."

Continuing, the chemists report the results of their own analyses as follows:

"The results of the chemical examination of the specimens of Chinosol purchased in the open market agree with those obtained and reported by European chemists. It was found that barium chlorid precipitated, from an aqueous solution of Chinosol, all the sulphur as barium sulphate. On determining the barium sulphate it was found that it represented, calculated to sulphate ion (SO_4) 33.10 per cent. of the total weight Chinosol, agreeing with the total sulphates 33.46 per cent., found by Sonntag (*Arend's Neue Arzeneimittel und Spezialitäten*, 2nd edit., p. 121). The total nitrogen was found to be 3.80 per cent., also in accord with the work of Sonntag, who reports 4.08 per cent. All the potassium was found to be in the form of neutral sulphate and amounted to 30.70 per cent. confirming Sonntag's figure of 31.25 per cent. and 15.18 per cent. of the sulphates to be in combination as oxychinolin sulphate.

"From these figures it is seen that the analyses of Chinosol by different chemists agree and that they show that the sulphur present is in the form of sulphates and not in the form of sulphonates as claimed by the promoters of Chinosol, thereby disproving the statement that Chinosol is a definite chemical body and proving it to be simply a mixture or a double salt of potassium sulphate and oxychinolin sulphate."

W. A. PUCKNER, Secretary.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Acute Bronchitis.

In this inflammation the pathology described for acute inflammation of mucous membranes (THE JOURNAL, Dec. 28, 1907, page 2163), is localized in the bronchial tubes. Besides slight fever, there is pain from congestion, somewhat disturbed breathing and a cough due to irritation. In the first stage this cough is caused by the distension of the mucous membrane tickling or irritating the nerves, and is at this time dry, causes pain, and not only is not productive of expectoration, but the very jarring irritates the inflamed tissues; hence this cough should be stopped. In the next stage, when mucous secretion begins and later, perhaps, purulent secretion occurs the cough should be encouraged.

If this acute bronchitis is prolonged into a subacute stage, then stimulation should be given to aid the mucous membrane to become normal and cease its hypersecretion.

The indications for treatment are the same as for acute coryza:

1. Prophylaxis.
2. The abortive treatment.
3. The treatment of the acute stage.
4. The treatment of the second stage or subacute condition.

The prophylaxis and the abortive treatment of acute bronchitis are the same as that of acute inflammation of the upper air passages (THE JOURNAL, Dec. 28, 1907, page 2163).

Simple acute bronchitis not caused by the influenza bacillus is rarely attended with much fever except in young children and old adults. If deemed best, two or three small doses of one of the coal-tar antipyretics and some cathartic may be administered.

Quinin should not be administered during the acute congestive stage, as there is quite likely to be some congestion of the throat at the same time, and for the same reasons as stated middle-ear inflammation might be encouraged.

In young children a simple diaphoretic may be administered, as:

℞.	c.c.		
Liquoris ammonii acetatis	100	or	fl℥iv

Sig.: A teaspoonful, in water, every hour.

Sweet spirit of niter may be given, but is not of as much value as supposed. If it is administered for this purpose, a half-teaspoonful may be given every half-hour for several hours.

A sedative cough mixture should be given, as:

℞.	gm. or c.c.		
Codeinæ sulphatis	20		gr. iii
Ammonii chloridi	5		ʒiss
Syrupi ipecacuanhæ	5	or	fl℥iss
Syrupi acidi citrici	25		fl℥i
Aquæ ad	100	ad	fl℥iv

M. et Sig.: A teaspoonful, in water, every two hours.

The codein stops the irritability of the nerves and prevents part of the coughing which, being non-productive, is useless and harmful. The ammonium chlorid in small doses tends to make the mucous membrane secrete, which will relieve the congestion. The ipecac in this small dose tends to make the mucous secretion thinner, and hence more easily expectorated. (And the ipecac must be in small doses else nausea will be caused and the medicine can not be taken, and the object will be defeated; in other words, this ipecac must be carefully measured and not *guessed* at by the druggist who puts up the prescription.) The syrup of citric acid makes the solution sour, which is pleasing to most patients. It is a sad mistake to give a bad tasted drug like ammonium chlorid in a sickish, sweet mixture. Also, the nauseating so-called expectorant syrups should never be ordered, as they do more harm to the stomach than they can possibly ever do good to the bronchial mucous membrane. The following official syrups should never be administered: Syrupus picis liquidæ, syrupus scillæ, syrupus scillæ compositus (except as an emetic), and syrupus senegæ.

Instead of codein sulphate in the above prescription, 0.0015 of a gram of heroin (1/40 grain) at a dose may be used if preferred. Morphin is more likely to cause nausea as well as constipation, hence it is not so useful as either of the above alkaloids.

If the bronchitis continues into the second stage and the expectoration has become profuse and easier, the cough mixture should be given every three or four hours instead of every two hours. If there is but little more cough than is necessary for expectoration, another cough mixture should be written without the codein (or heroin) and the ammonium chlorid may be increased. Also, if deemed advisable, the ipecac may be left out. If after a few days the bronchial secretion is still profuse, it is well to substitute terpin hydrate for the disagreeable ammonium chlorid, and this is best administered in capsules or tablets, as:

℞.	gm.		
Terpini hydratis	6	or	ʒiss

Fac capsulas 20.

Sig.: A capsule, with water, every four hours.

Or:

℞.	gm.		
Heroinæ	03	or	gr. ss
Terpini hydratis	5		gr. lxxv

M. et fac capsulas 20.

Sig.: A capsule, with water, every four hours.

Both of the above prescriptions may be ordered as tablets if desired.

The National Formulary recommends three elixirs of terpin hydrate as follows:

℞.	c.c.		
Elixiris terpini hydratis (N. F.)	200	or	fl℥vi

Sig.: Two teaspoonfuls, in water, every three hours.

[Each teaspoonful of the above represents 0.065 of a gram (1 grain) of terpin hydrate.]

Except when terpin hydrate is administered to children it is best to give it in tablet, powder or capsule, as the amount that can be dissolved in a teaspoonful of any liquid is too small for an ordinary dose. Unless it is given very frequently, terpin hydrate, to be of any value in bronchitis, must be given in at least 0.30 of a gram (5 grain) doses. On the other hand, it must be remembered when the elixir of terpin hydrate is administered to young children that it contains 40 per cent. of alcohol.

Or the following may be ordered:

℞.	c.c.		
Elix. terp. hydratis cum codeina (N. F.)	100	or	fl℥iv

Sig.: A teaspoonful, in water, every three hours.

[Each teaspoonful represents 0.065 of a gram (1 grain) of terpin hydrate, and 0.008 of a gram (⅛ grain) of codein.]

Or:

℞.	c.c.		
Elix. terp. hydratis cum heroina (N. F.)	100	or	fl℥iv

Sig.: A teaspoonful, in water, every four hours.

[Each teaspoonful represents 0.065 of a gram (1 grain) of terpin hydrate and 0.004 of a gram (1/15 grain) of heroin.]

During the first and second stages of bronchitis the bowels must be made to move daily with some laxative, if such is needed, as many of the above cough mixtures cause constipation, in addition to the constipation which occurs from the fever caused by the cold.

After the cough medicine has been stopped or ordered taken only very infrequently, a tonic should generally be administered, such as small doses of quinin combined with iron and strychnin if deemed best.

If the patient is asthmatic and wheezing rāles occur in the chest, or if the bronchitis persists into a subacute state, unless the patient is anemic or debilitated, potassium or sodium iodid in small doses should be given, as:

℞.	gm. or c.c.		
Sodii iodidi	5	or	ʒiss
Aquæ	100		fl℥iv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

This iodid can also be administered in milk or in effervescing water, but it is a mistake to combine an iodid with a nasty, sweet syrup; even the old compound syrup of sarsaparilla should be omitted.

If the patient is anemic and debilitated, iron should be given, and perhaps cod-liver oil or an emulsion of it. A half-teaspoonful, at least, of the pure oil three times a day will generally be as well tolerated as an emulsion. Or one of the several following official emulsions may be ordered:

Emulsum olei morrhuæ.

Emulsum olei morrhuæ cum calcii lactophosphate (N.F.).

Emulsum olei morrhuæ cum calcii phosphate (N. F.).

Emulsum olei morrhuæ cum calcii et sodii phosphatibus (N. F.).

Emulsum olei morrhuæ cum extracto malti (N. F.).

Emulsum olei morrhuæ cum hypophosphitibus.

Emulsum olei morrhuæ cum pruno virginiana (N. F.).

The dose of any of the above is about two teaspoonfuls three times a day.

Creasote is sometimes given for this persistent bronchitis, but, if ordered, should not be administered too long, as it tends, after the first increase of appetite, to interfere with digestion and to disturb the functional activity of the pancreas and liver. A week or two of small doses of creasote, however, can do no harm, and may do good, as:

℞.	c.c.		
Creasoti	1		m. xx
Glycerini	25	or	fl℥i
Spiritus frumenti	ad 100		ad fl℥iv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

Any bronchitis that becomes subacute and then does not stop after several weeks should be treated as a beginning tuberculosis, and such patients should receive the fresh air and rest cure found so valuable in preventing that disease in its incipiency. It is not even necessary to give tuberculin or to vaccinate with tuberculin (if this vaccination is found to be a success) to ascertain whether a tubercle is present somewhere or not, as whether or not the patient has tubercles harbored somewhere, the continued bronchitis makes a most splendid opportunity for the ever present tubercle bacillus to begin its work. Hence, such patients are not safe from tuberculosis until the bronchitis is well.

Patients with acute bronchitis, at least in the climate of most parts of the United States, should remain in the house during the acute stage. Also, there seems to be no doubt that, like any other acute inflammation, it will get well faster when the patient remains at absolute rest in bed. However, in this inflammation that is generally so simple, as soon as the fever has subsided most patients must go about their work. Of course, old people, debilitated patients, and young children can remain at rest in the house until practically well, but the majority of patients have their acute bronchitis attacks last longer than they otherwise would because they must attend to their work, whatever that may be.

However well patients with pneumonia may do in tents or on roof gardens, patients with acute bronchitis do not do well in the early stages under exposure, hence the acute bronchitis patient should not be subjected to the fresh-air treatment of tuberculosis, although, of course, the air in the rooms in which he is should be frequently changed. In other words, the hygiene should be good.

Emulsion of Linseed Oil.

Dr. W. Gilman Thompson, of New York (*Druggists Circular*, November, 1907), uses in his practice the following emulsion of linseed oil, which is prepared by his druggist as follows:

℞.	gm. or c.c.		
Chondri	12		ʒiii
Aquæ	450		℥xv
Olei lini	270		ʒix
Olei gaultheriæ		or	
Olei cinnamomi	āā, 3		m. l
Alcoholis	30		ʒi
Acidi hydrocyanici diluti	6		ʒiss
Glycerini	30	•	ʒi
Syrupi	ad 1000		ad Oii

M.

"A mucilage of the Irish moss and water is prepared according to the National Formulary. The oil is emulsified with the mucilage as directed in the Irish moss emulsion of cod-liver oil of the National Formulary. The other ingredients are then added in the usual manner." The dose of the above would be about two teaspoonfuls three times a day, after meals.

Antiseptic Gargle and Mouth Wash.

Robin (*Gazette médicale de Paris*, Sept. 5, 1907) advises the use of the following solution in the mouth and throat if there are enlarged glands in the neck:

℞.	gm. or c.c.		
Betanaphtholis	10		gr. iss
Sodii boratis	10	or	ʒiiss
Aquæ menthæ piperitæ	500		Oi

M. et Sig.: To be used warmed three or four times a day, to cleanse the mouth and throat.

Celery.

An editorial in the London *Lancet* for Nov. 9, 1907, states that this pleasant article of diet "contains 93 per cent. of water, with a little oil, 3.5 per cent. of starchy material, 1.5 per cent. of nitrogenous matter, 1 per cent. of cellular fiber, and 1 per cent. of mineral salts." The mineral salts consist of sodium and potassium salts, "with a distinct amount of iron." The oil in celery "is allied to the oil in parsley, or apiol," which has slight diuretic action. The food value, then, of celery is simply that of a carminative having possibly slight diuretic action.

Correspondence

Inconsistent Attitude of the Medical Profession in Nostrum Vending and Advertising.

SIDNEY, OHIO, Jan. 4, 1908.

To the Editor:—Your note[1] on the prescribing of nostrums and the discussion of this subject before the Philadelphia Branch of the American Pharmaceutical Association, reported in the same issue, prompt me to call your attention to a favorite method of certain members of the American Proprietary Association. For instance, I have before me an advertisement, in large display type, worded like this: "He Knows. Consult your family doctor freely about medical matters. He Knows. Trust him. Do as he says. Follow his advice. Talk with your doctor about Ayer's non-alcoholic sarsaparilla. . . . Ask him if it aids Nature in building up the general health. We have no secrets. We publish the formulas of all our medicines." Now, at first thought, it would appear that this method is a shrewd way of using the compulsion of law to aid the nostrum interests. Relying on the fact that bold assertions go a long way in allaying suspicion, for them it is fairly safe to assume that the doctor will not be consulted, provided the victim thinks this to be a legitimate doctor's prescription. He is willing to prescribe for himself if he thinks the physician would use the same drugs.

It is scarcely believable that any self-respecting physician would use the pharmacal products of "manufacturing chemists" who bid for public patronage as do other fakers and charlatans. However, in the light of Mr. Bok's assertion that, of 5,000 prescriptions examined 47 per cent. called for proprietary remedies of unknown composition, it is possible to see that these shrewd men with an eye for business know what they are talking about when they say "consult your doctor." If 47 per cent. of 5,000 are of unknown composition, what per cent. are of known ingredients emanating from the laboratories of manufacturers whose methods of reaching the purses of the people are those of the demagogue?

You say truthfully that "there are serious grounds of complaint against a considerable section of the medical profession," referring, of course, to the practice of prescribing. Let me suggest to you one way of reforming this evil; a method well within the province of any member of the Association of Medical Editors. If a large per cent. of men "well known" rather than "eminent" have been led into an indefensible practice, it will be the part of wisdom to learn the origin and abode of the tempter. It would be ridiculous to blame the newspapers. The medical colleges would repel any such insinuation, for the little teaching they give in prescription work is at least ethical. On whom then can we place the blame? Before me is a medical journal of large circulation in three states, for which men both "well known" and "eminent" write to the edification and satisfaction of an appreciative constituency. Nearly every advertisement in this publication is objectionable, and more than 90 per cent. of them have been condemned by the Council on Pharmacy and Chemistry.

If 47 per cent. of city physicians, with their opportunities of correct information, are led into forbidden paths, what might be found in the work of those who depend almost wholly on medical journals for counsel and advice? Think of the tired and perplexed country doctor with a case of neurasthenia on his hands—perhaps an anemic young girl—into whose pale cheeks his favorite old standby, muriate tincture of iron, has signally failed to bring the glow of health. Then his eye alights on the joyful announcement that the "Damon and Pythias of Secondary Anemia Therapy" has been discovered, and is just the thing he wants. Why not? "The hematinic properties of the one ingredient being synergistically strengthened by the metabolic stimulation of the other ingredient which together with its inhibitory influence on cellular katabolism presents a combination in cleoproteid form which meets all conditions of increased tissue waste and eutrophic inefficiency." And there you are. Can you blame this doctor for signing a "hand-me-down prescription of the nostropathic variety"?

I ask in all seriousness whether, indeed, there is to be one code of ethics for the men who practice and another for those who publish? Is there no standard of honor to which these men, who edit and publish medical journals, can be held? To assert the negative is absurd. Every society to which a medical editor or publisher belongs, county, district, state or national, has jurisdiction in the conduct of members, and until such authority has been exercised it is absurd to ask the general practitioner to boycott the offending medical journal.

Just criticism has been made of religious publications for their course in giving place to fraudulent advertisements. However, conferences, presbyteries, associations and other bodies of churchmen have passed condemnatory resolutions of the most drastic kind. Ministers, whenever asked to do so, have responded nobly in rebuking the trade in drugs of unknown composition. Doctors have been unsparing in their criticism of newspapers, but so far as I know no official action has been taken by any medical society in any city where an offending medical journal is published, and of which society the editor is a member.

That the protest of churchmen has been effective can be seen by an examination of religious publications. The leading church papers have taken note of the fact that they are being criticised sharply, and have eliminated to a large extent the advertisements of nostrums containing alcohol and opium. The editor, however, having no knowledge of the principles of medicine, can not understand that all such advertisements which profess to cure are fraudulent and so he still gives place to digestive tablets, liniment, hair restorers, pile remedies, etc., for which ignorance he is somewhat excusable. For the medical editor there is no excuse. The Ohio League proposes to carry on its work until every church paper in the state has clean advertising pages. It is hampered continually by the fact that it appears inconsistent to ask of another profession, a condition of purity of which its own hands give no evidence.

D. R. SILVER.

[Dr. Silver modestly refrains from stating that he has been one of the most active members of the Ohio League for the Suppression of Fraudulent Advertising, which has accomplished so much in securing the elimination of fraudulent nostrum-advertising from the religious press. This league, which at first consisted of about ten members and subsequently increased to thirty, was created by the Ohio State Medical Association in 1906, and was the pioneer organization in the work. While the energies of this league were directed especially on Ohio religious journals, its influence spread over the whole country. We have already referred to the number of religious journals that have eliminated fraudulent nostrums from their advertising pages as a direct or indirect result of the work. The report of this league[2] shows that it was found useless to appeal to the editors and publishers of these religious journals; that if results were to be accomplished an appeal must be made direct to the supporters of these papers, i. e., to the clergy and to the subscribers among the church people.

The last sentence of Dr. Silver's communication should be taken to heart by those who want to see nostrum advertising eliminated from religious and other non-medical journals. The experience of this league shows exactly where the power lies to clean up the advertising pages of medical journals. As with the editors and publishers of religious journals, so with the editors and publishers of medical journals; the majority will continue to accept nostrum advertisements so long as the subscribers do not object.—ED.]

1. THE JOURNAL A. M. A., Dec. 28, 1907, p. 2155.

2. Ohio State Medical Journal, January, 1908.

The Toxemias of Pregnancy.

NEW YORK, Jan. 13, 1908.

To the Editor:—The editorial in THE JOURNAL, January 11, on the value of the newer methods of urine examination in toxemia of pregnancy accepts without question the findings of Williams[1] and Ewing.[2] These writers claim that, by means of special chemical examination of the urine, involving an estimation of the total nitrogen and the comparative percentage of nitrogen excreted as urea, ammonia, kreatinin, kreatin and uric acid, some information may be gained in regard to the amount of liver involvement and the extent of the liver lesion which is supposed to be the cause of the difference in urinary nitrogen metabolism and to be associated with toxemia of pregnancy and eclampsia.

I have been associated and familiar with the work of Ewing and Stone for some years, and at one time was an enthusiastic advocate of the value of the examination of the urine for differential nitrogen partition in the toxemia of pregnancy. However, more clinical experience with these methods has not proved their worth as an indicator of hepatic disease and, correspondingly, of the clinical condition of the toxemic patient. It can not be doubted that in severe diseases of the liver the urea-nitrogen lessens in amount and the ammonia-nitrogen and undetermined nitrogen increase; but there are other factors in the causation of these urinary changes, independent of a supposed lesion of the liver or disorder of the hepatic function. As Steugel[3] has pointed out, the total nitrogen may be greatly reduced by limitation in proteid food or starvation and, at the same time, enormous relative as well as actual reduction in the urea-nitrogen may occur with corresponding increase in the ammonia-nitrogen, uric-acid-nitrogen and undetermined nitrogen. E. and O. Freund, quoted by Stengel, found the urea-nitrogen in the professional faster, Succi, as low as 54 per cent. of the total nitrogen. It can not be asserted that the altered relations are due to the functional disturbance of the liver, when it is possible that the repeated vomiting in toxemia, the effects of the inanition itself with its reduced output of total nitrogen and altered ratio, the decreased ingestion, faulty absorption and defective excretory processes may be the essential causes.

Again, in Williams', Ewing's and Ewing's and Wolf's studies, no attempt has been made to control or estimate the amount of nitrogenous ingestion. Pearce and Jackson[4] have shown, in a recent study of experimental liver necrosis in dogs, that injection of hemagglutinative and hemolytic immune sera may produce hepatic lesions, similar to the hepatic lesions of toxemia of pregnancy with vomiting and eclampsia. In addition, the factor of vomiting and inanition is removed and the dogs were fed on a purin-free diet of casein, cracker-dust and lard. In these experiments it was found that, when hepatic lesions, analogous to those of toxemia or pregnancy and eclampsia in man, were produced, instead of a diminution in the total nitrogen and relative urea-nitrogen percentage, there was an actual increased elimination of total nitrogen with a correspondingly augmented output of urea. The ammonia-nitrogen became diminished at first; but later rose slightly above normal. The augmentation in total nitrogen was more marked and continued in diffuse necrosis of the liver. They draw attention to the fact that in necrosis, although many individual liver cells may cease to functionate, there always remain many normal cells ready and capable of assuming in a vicarious manner the function of those dead. This "factor of safety" is of great importance in the study of the chemistry of hepatic disturbances, and minor liver changes may not alter the chemistry of the urine while large portions of the functioning liver tissue remain, as is well shown by the partial extirpation experiments of Ponfick.

While caution is necessary in transcribing deductions from the results of animal experiments, these results throw great doubt on the supposed alteration of the nitrogen partition in toxemia of pregnancy. On the one hand in dogs, where the liver lesions may be produced experimentally and at will and inanition is absent, the nitrogenous output is augmented and the relative urea-nitrogen is increased, while the ammonia-nitrogen, kreatinin-nitrogen and kreatin-nitrogen are not increased; on the other hand in man, where inanition and vomiting are present and ingestion is decreased, there is diminution in the total nitrogen and urea-nitrogen percentage with a relative increase in the amounts of ammonia-nitrogen and kreatin-nitrogen while the liver lesion can not be extensive and there must be a large "factor of safety" in those patients which survive. It thus seems that the effects of the vomiting and inanition and the decreased ingestion may be the direct cause of such alteration in the nitrogen metabolism, as was noted by Williams and Ewing.

In addition in the study of reports and cases of toxemia of pregnancy by these methods for three years, I have come to believe that the examination of the nitrogen partition in the urine offers no information in regard to the clinical course or extent of the toxemia. It may offer some evidence in regard to the nitrogen ingestion or amount of inanition. The determination of the amount of urea-nitrogen without reference to the nitrogenous intake and the degree of intestinal absorption is valueless and futile, and inanition with lessened nitrogenous ingestion may of itself produce extensive changes in the nitrogen partition in the urine.

Therefore, I beg you to correct the conclusions of your recent editorial that the differential nitrogen examination of the urine may be of value or made a basis for treatment, as has been advised by Williams and Ewing, when such conclusions are unwarranted by facts and unaccepted by scientific men. As Stengel states, "much supposedly scientific labor has been wasted and erroneous deductions based on this useless determination." The consequences are too grave to allow treatment to be based on such incomplete studies.

ELLICE MCDONALD.

[COMMENT.—We are glad to publish the above communication, setting forth in such detail the evidence that may be advanced against the supposed diagnostic and prognostic value of the ammonia excretion in the toxemias of pregnancy; the letter is of itself an addition of value to the literature of the subject. The editorial in question, however, was concerned chiefly with the evidence indicating how closely related are acute yellow atrophy of the liver, puerperal eclampsia, and certain types of pernicious vomiting of pregnancy; and in considering the present status of our knowledge concerning the cause or causes of these toxemias of pregnancy. The various hypotheses concerning this last feature were discussed, and the occurrence of acidosis naturally was brought forward, this in turn leading to a brief mention of the studies of Williams of the urine in pernicious vomiting of pregnancy. These studies, whether or not one accepts all the conclusions drawn from them, are of great importance in bringing forward the fact that certain forms of pernicious vomiting of pregnancy are associated with extensive degenerative changes in the liver, and in this respect as well as in the urinary changes bear a close relation to acute yellow atrophy and eclampsia. By the same studies it has been shown that some other forms of pernicious vomiting are not associated with corresponding metabolic and hepatic alterations, and these cases seem to be due sometimes to reflex, sometimes to neurotic causes. In stating the conclusions to be drawn from this work we took care to introduce them solely as the conclusions of the investigator who was being quoted. When, in attempting to keep our readers in touch with modern work, we have occasion to discuss theories and problems that are still undergoing development, we can not, of course, assume any right to draw our own conclusions in advance of those who are working on these subjects; we can only quote the opinions of these workers, which must be accepted at their face value. The possibility that part or all the increase in urinary ammonia in pernicious vomiting may be due to starvation, rather than to the pathologic condition itself, has been generally recognized, and has been discussed by Williams himself; but by no means all students of the pathology of metabolism will agree fully

1. Johns Hopkins Hosp. Bull., August 11. 1906.
2. Amer. Jour. Obstet., 1905, li, 145, and 1907, lv.
3. Trans. of Cong. of Amer. Phys. and Surg., 1907, viii, p. 28.
4. Albany Med. Annals, January, 1908, or Bender Lab. Reports, 1908, iv.

with the stand taken by our correspondent. That the starvation which results from the protracted vomiting is not the sole cause of the increased urinary ammonia in toxemic vomiting of pregnancy, seems to be demonstrated by the cases in which equally severe vomiting and starvation due to neurotic or reflex causes have not been accompanied by any corresponding urinary change. Furthermore, we have good theoretical grounds for expecting that toxemic conditions associated with serious hepatic lesions should lead to acidosis and consequent increase in urinary ammonia, since the liver is apparently a most important agent in the oxidation of organic acids formed in metabolism. Therefore, we can hardly discredit so completely the work and the deductions made by such esteemed investigators as Williams, Ewing and the others cited, as Dr. McDonald wishes us to do.—ED.]

Vaccination for Pertussis.

BROOKLYN, Jan. 8, 1908.

To the Editor:—A curious example of the rediscovery and republishing of a supposed new fact or theory is found in the work of Amat and his colleagues on the influence of vaccination on pertussis, as described in THE JOURNAL A. M. A., Dec. 14, 1907, page 2012. About 1890, vaccination as a remedy for whooping cough was tried extensively in this city, and, I doubt not, in other localities. I do not remember who originated the idea, but I remember trying it on about two dozen children. The first two on whom I tried it were in the first week of the paroxysmal cough, and they appeared to be promptly cured by the procedure. Never after that have I seen the slightest beneficial effect. The general opinion of my neighbors, who also gave it a trial, was that there was little if any benefit to be derived from vaccination in pertussis. D. W. WAUGH.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

TREATMENT OF CRUSHING INJURY OF THE LEG.

CHITTABALBIE, KOREA, Nov. 30, 1907.

To the Editor:—I wish to obtain an expression of opinion as to the best procedure in the case here reported: Nov. 19, 1907, a heavy quartz boulder fell on the inner aspect of the right leg of a Korean gold miner. The sharp edge of the stone made an oblique cut in the skin, about 8 inches long, severing the anterior tibial artery, and crushing out a section in the middle of the flexor longus digitorum and tibialis anticus muscles about 2½ inches in length. The periosteum of the tibia was uninjured or at least not perceptibly contused. The saphenous vein stood out clearly and uninjured in the wounded field. There had been little hemorrhage, as a tourniquet was applied immediately after the injury. The injury occurred at 3:30 p. m., and I saw the man one half hour later. I cut away all the contused tissue and attempted to unite the severed ends of the muscles by splicing and holding in place with catgut. The anterior tibial artery was ligated. I covered as much of the wounded area as was possible with the skin, without making tension, but the edges were separated by a space of about two-thirds of an inch. I applied a moist dressing of a 1 to 3,000, solution of bichlorid of mercury, changing it daily. Four days later gangrene set in so rapidly and the patient showed so much toxemia that I advised an amputation above the knee. He refused to submit and was removed from the hospital by relatives. The question that has arisen in my mind is: Is splicing muscular tissue with a view of uniting severed ends a legitimate procedure? Would it not have been better to have removed these severed muscles, altogether, at their tendinous extremities and supplied their function after recovery with artificial apparatus? J. W. NOLAN, M.D.

ANSWER.—Interpreting the question as applying solely to wounds in which muscular tissue is crushed and lacerated it may be answered in the affirmative to the extent that it is advisable to attempt to save as much of the muscle as is possible, yet it frequently becomes a question of personal judgment in a given case as to whether or not a torn muscle will live and retain its vitality If it seems certain to die it should be removed at once, even though it take the entire muscle, in which latter case the tendon, should it be preserved, should be transplanted into a neighboring muscle of a similar function. Greater chances may be taken with a muscle of importance which can not be substituted than with one of less importance. Should one's judgment lead one to believe that the torn muscle will live, then it should be repaired by suturing or splicing in the manner which seems best calculated to preserve its function. The great trouble with wounds produced in the manner above mentioned is the fact that the tissues are always ground full of dirt, and in the dirt (soil) are frequently found anaërobic organisms, both saprophytic and pathogenic, some of which may produce a rapidly spreading gangrene. It is always well, therefore, in wounds of this character in which gross dirt or soil is known to have entered, not to attempt to close the wound too much, but after cleansing it as thoroughly as possible, to leave it open freely, drain all the nooks and pockets and apply a moist, hot, non-toxic antiseptic dressing, such as hot boric acid or acetate of aluminum solution or to keep up constant irrigation with the same until the wound cleanses itself; or till a local immunity is established, and the danger of acute gangrene, which always occurs during the first few days, is passed.

DANGER OF DEATH FROM STATUS LYMPHATICUS IN ADENOIDECTOMY.

SOUTH HAVEN, MICH., Dec. 29, 1907.

To the Editor:—What are the facts in regard to the danger of anesthetics in the removal of adenoids? Is chloroform especially more dangerous than ether in this operation?

G. D. CARNES.

ANSWER.—The lymphoid diathesis, or status lymphaticus as it is termed, is a definite pathologic entity, the chief gross lesions of which are a hyperplasia of the thymus gland and of the lymphatic tissue of the body in general. The lymphatic tissue includes not only the lymph nodes, but also the Malpighian corpuscles of the spleen, the tonsils, adenoids, and the lymphatic apparatus of the intestines. Probably as a result of the hyperplasia of lymphatic tissue autocytotoxins are formed, giving rise to a condition of lymphotoxemia. Blumer suggests that "individuals who are subjects of the status lymphaticus are born with an instability of the mechanism regulating the 'horror autotoxicus,' at any rate so far as the lymphatic apparatus is concerned, so that they are subject to intermittent attacks of lymphotoxemia. During the attacks of lymphotoxemia such individuals are especially susceptible to the action of bacterial or chemical poisons, and also to physical and psychic shocks, which at these times may cause their death under circumstances which would be trivial to a normal individual." A number of very sudden deaths have occurred from a variety of causes in individuals who were subjects of the status lymphaticus and of these causes the administration of an anesthetic is by far the most common. Death has occurred during the administration of ether as well as of chloroform, but as chloroform is more dangerous than ether to normal individuals, the risk to these peculiarly "fragile" individuals must be correspondingly increased. Blumer says: "When we come to consider whether deaths from anesthesia associated with the status lymphaticus bear a relation to any particular disease or diseases, it would seem as though two classes of patients are especially liable to this accident, patients with goiter, either simple or exophthalmic, and patients with adenoid vegetations." While all patients with adenoids are by no means affected with the status lymphaticus, yet the pharyngeal adenoid tissue is a part of the lymphatic system which is always involved in that condition, therefore, all patients with adenoids should be carefully examined for other signs of the disease before administering to them an anesthetic.

TREATMENT OF LEG ULCER.

——, TEXAS, Jan. 1, 1908.

To the Editor:—Please give me a good remedy for leg ulcer. I can find nothing in my library which gives any account of this disease, which seems to be very prevalent here. The family history of the patient is negative; no syphilitic or tuberculous history or ancestry. Patient has always been sober. The ulcer in this particular case developed on the site of a bruise received twenty-seven years ago, and patient has been treated by numerous physicians, but without relief. He came to me about two months ago for treatment, and I have exhausted all remedies known to me, and so far without avail. W.

ANSWER.—The data given in this case are very meager, altogether too much so to convey any kind of an idea as to the conditions present. Nothing is said about the general condition of the patient, of his heart, kidneys, etc. Nothing is said about the local conditions, the site of the ulcer, its size: its surface, whether clean and granulating or foul; its edge, whether hard and indurated, undermined and spreading, or raised and proliferating; the character of the surrounding parts: the presence or absence of varicose veins, etc. One is therefore left entirely at sea as to the character of the ulcer and the reasons why it is so persistent. If varicose veins are present, any kind of treatment which does not take into consideration their cure by some operative means will probably fail. Assuming that an ulcer which has existed for twenty-seven years will be surrounded by considerable hyperplasia

and that its surface will present little or no disposition to granulate and that the patient's general condition has been put as nearly as possible in proper shape, the treatment advised for the ulcer is as follows: Put the patient to bed with the leg elevated and apply hot boric acid solution dressings changed several times a day until the surface of the ulcer is perfectly clean and the surrounding tissues softened up. Excise the ulcer completely under the usual rules of surgical cleanliness and graft the area with Thiersch skin grafts. This is the quickest, surest and most satisfactory way of getting rid of the ulcer—assuming that the associated conditions above mentioned are absent or previously properly taken care of.

TREATMENT OF ACETANILID POISONING.

RALEIGH, N. C., Jan. 12, 1908.

To the Editor:—Please outline treatment for chronic acetanilid poisoning, or refer me to the place where I can find this. I remember reading an article in THE JOURNAL about two years ago, but I can not find it now. The poisoning in this case is from excessive use of headache powders. RALPH S. STEVENS.

ANSWER.—We can not do better than quote the treatment advised by J. B. Herrick in THE JOURNAL, Feb. 3, 1906, p. 357: "The treatment of this drug habit is comparatively simple. By gradual withdrawal of the acetanilid, temporary substitution of codein for pain or sleeplessness and the use of tonics, recovery will commonly ensue. Attention to the stomach and bowels is important, as on good digestion largely depends the power of blood repair and the return of weight and strength. Much can be done in the way of suggestive treatment by sympathy and encouragement and by having a frank understanding with the patient as to the nature of the ailment, its dangers and the best way of overcoming them. Difficulties in the way of relapse into the old habits will be encountered unless the patient is in a hospital or sanitarium or at home under the careful watching of a trusty nurse. These patients become in a strict sense addicted to the use of the drug, but it has not the firm hold on them that morphin or cocain acquires on its victims. The habit is, therefore, more easily broken off. While one can not tell how much permanent damage has been done in these patients in the way of injury to heart muscle, kidney, nervous system, blood-making organs, etc., it is remarkable how rapidly they improve and approach the limits of perfect health when the use of the drug has been stopped. Even in the most desperate cases, therefore, one may give a fairly hopeful prognosis."

The treatment of acute acetanilid poisoning consists in washing out the stomach and administering a saline cathartic and supporting the circulation by appropriate cardiac tonic or stimulants, such as strychnin, strophanthus, nitroglycerin, etc. In case of severe dyspnea and cyanosis, bleeding, followed by the injection of physiologic salt solution, may be tried.

SUTURE OF HEART.

VERA CRUZ, MEXICO, Dec. 26, 1907.

To the Editor:—Please tell me how many times suture of the heart has been done in the United States? I ask because I have read that this operation has been done only three times on this continent, and I think this statement an error.

CARLOS MANUEL GARCIA.

ANSWER.—Up to the middle of 1907, Rehn (*Arch. f. klin. Chir.*, 83, 723), was able to collect 124 cases of suture of the heart for wounds, with 49, or 40 per cent., recoveries. Of this number 9 were done in the United States, 5 of them successfully.

COMPOSITION OF BROMIDIA.

VINCENNES, IND., Jan. 11, 1908.

To the Editor:—Will you kindly give me the formula of bromidia? Is there an old formula differing from the present? J. G. JONES.

ANSWER.—Various analyses of bromidia have been published by different observers and at different times. The analysis said to be furnished by the firm of Battle & Co. is as follows:

Every fluidram contains fifteen grains each of chloral hydrate and bromid of potassium, and one-eighth grain each of extract of cannabis indica and extract of hyoscyamus.

Langkopf's analysis referred to in "Hager's Handbuch der Pharmazeutischen Praxis," ii, 178, is:

Potassium bromid	30	3i
Chloral hydrate	30	3i
Extract of hyoscyamus	25	grs. iv
Tincture of cannabis indica	5	3i
Fluidextract of licorice q. s. ad	200	3viss
Oil of orange peel	30	gtt. v

The "Arbeiten aus dem Pharmazeutischen Institut der Universität Berlin," vol. ii, p. 221, quotes an analysis by F. Hoffmann, published in the *Pharmazeutische Zeitung*, 1893, No. 48:

Each fluidram (3.7 c.c.) contains:

Potassium bromid	15 grains	.972 gm.
Chloral hydrate	15 grains	.972 gm.
Extract of cannabis indica	1/8 grain	.008 gm.
Extract of hyoscyamus	1/8 grain	.008 gm.

An analysis by Molle, given in the same report of the Pharmaceutic Institute is as follows (it varies somewhat from the others):

Potassium bromid.....14.45 per cent.

Alcohol. Chloral hydrate. Sugar. Colchicum. Ethereal oil (pomegranate).	Found present as in previous analyses.
Extract of hyoscyamus. Extract of cannabis indica.	Doubtful.

A reliable preparation of this kind is the mistura chlorali et potassii bromidi composita of the National Formulary. Its composition is as follows:

Hydrated chloral (U. S. P.)	200	3viss
Potassium bromid	200	3viss
Extract of Indian hemp (U. S. P.)	2	grs. xxx
Extract of hyoscyamus (U. S. P.)	2	grs. xxx
Pumice in fine powder and well washed	20	3v
Water a sufficient quantity to make 1000 c.c.		Oii

Four cubic centimeters (1 fluidram) of this preparation represent about 0.8 gm. (12 grains) each of hydrated chloral and potassium bromid, and 0.008 gm. (1/8 grain) each of the extracts of Indian cannabis and hyoscyamus. The average dose is 4 c.c. (1 fluidram).

EFFECT OF THE STRENUOUS LIFE ON THE HEART AND CIRCULATION.

GRAND RAPIDS, MICH., Jan. 7, 1908.

To the Editor:—What would be the effect on the heart and circulation of living an intensely strenuous life, under extreme mental strain, with great anxiety, this condition being accompanied by irregularity in eating and drinking? There is no history of infection or of previous sickness of any kind. Would it be probable that under such conditions there would be such an excessively high arterial tension that it would result in transudation of serous fluid into the pericardium or pleural spaces, or both, to such an extent that it could be readily detected? J. G. HUIZINGA.

ANSWER.—A strenuous life and mental strain, with great anxiety might produce increased vascular tension and probably lead ultimately to arteriosclerosis, but it is not usual for transudation of fluid to depend on high blood pressure alone. There is usually some toxic element or some change in the walls of the vessels (different from arteriosclerosis) which brings about edema or other transudation of fluid.

DEATHS FROM USE OF DIPHTHERIA ANTITOXIN IN ASTHMA.

CUBA, N. Y., Jan. 15, 1908.

To the Editor:—Since the publication of the report on the death from antitoxin, in THE JOURNAL, January 4, I have received many letters reporting unpleasant effects from antitoxin in persons with a history of some form of asthma. In order that definite information may be obtained on this question of vital importance to all practitioners, I should be pleased to receive reports of cases in which the use of antitoxin was followed by dangerous symptoms or death. I desire information whether any antitoxin had been administered previously, and whether there was any history of asthma in the subject. As soon as the replies are received they will be tabulated and the results published in THE JOURNAL.

H. F. GILLETTE, M.D.

METHOD OF ELICITING GROCCO'S SIGN.

NEW YORK CITY, Jan. 7, 1908.

To the Editor:—Please give method of obtaining Grocco's sign in pleurisy with effusion. A. L. CEASAR, M.D.

ANSWER.—Grocco's sign is obtained by carefully percussing the base of the chest on the side opposite to that on which the effusion is situated. In many cases, a triangular area of dulness will be elicited, having its base at the lower part of the chest and extending upward along the vertebral column to about opposite the angle of the scapula.

MORPHIN ERROR IN PHYSICIANS' MANUAL OF THE U. S. PHARMACOPEIA AND NATIONAL FORMULARY.

NEW YORK, Jan. 8, 1908.

To the Editor:—The useful "Physicians' Manual of the U. S. Pharmacopeia and National Formulary" is finding wide circulation among students who may not notice some grave mistakes made therein. I therefore take the liberty of pointing out that the strength of liquor morphinæ hypodermicus (Magendie) is given on page 98 as "2 grains to one fluid ounce" instead of "2 grains to one fluid dram." I suggest that you print this correction in THE JOURNAL. B. J.

ANSWER.—Our correspondent is correct. The strength of liquor morphinæ hypodermicus should be given as 2 grains to the fluid dram instead of 2 grains to the fluid ounce, as stated in the Manual.

NE REPETATUR.

SAN FRANCISCO, Dec. 31, 1907.

To the Editor:—I have on my prescription blank the words, "Non-repetatur" to prevent refilling. I find, however, that druggists pay little or no attention to this. Could there not be a provisionary

contract devised and printed on the back of the prescription blank that would prevent the pharmacist from refilling a prescription contrary to specific orders? V. C. T.

ANSWER.—We suggest to our correspondent that he and the other physicians of his locality get together and find a druggist who will agree to carry out the instructions on the prescription blank, and patronize such druggist.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 18, 1908:

Baily, H. H., asst.-surg., will proceed to Columbus Barracks, Ohio, for duty to accompany a detachment of recruits to Fort McDowell, Cal.

Bloombergh, H. D., asst.-surgeon, ordered to Jefferson Barracks, Mo., for temporary duty.

Ives, F. J., surgeon, retired from active service on account of disability, to take effect April 22, 1908; granted leave of absence to include April 22, 1908.

Nelson, Kent., asst.-surgeon, relieved from duty at Fort McHenry, Md., and will proceed to San Francisco, and take transport to sail on or about March 5, 1908, for Philippine Islands.

Gandy, Charles M., lieut.-colonel, professor of military hygiene, Mason, C. F., surgeon, and Hanner, J. W., asst.-surgeon, appointed members of board of medical officers to meet at West Point, N. Y., Feb. 4, 1908, for physical examination of the cadets of the first class at the U. S. Military Academy.

Kendall, W. P., surgeon, and Whaley, A. M., asst.-surgeon, appointed members of an Army retiring board, to meet at Fort Sam Houston, Texas, for examination of such officers as may be ordered before it.

Torney, G. H., deputy surgeon-general, Keefer, F. R., and Kennedy, J. M., surgeons, appointed members of board of officers, to meet at the General Hospital, Presidio of San Francisco, Feb. 4, 1908, for examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement.

Banta, W. P., asst.-surgeon, will report in person on Feb. 4, 1908, to Lieut.-Col. G. H. Torney, deputy surgeon general, president examining board at General Hospital, Presidio of San Francisco, for examination for advancement.

Craig, C. F., asst.-surgeon, will report in person on Feb. 11, 1908, to Major W. D. Crosby, surgeon, president examining board at the Army Medical Museum Building, Washington, D. C., for examination for advancement.

Tigno, E. P., dental surgeon, ordered from Madison Barracks, N. Y., to Fort DuPont, Del., for temporary duty.

Hughes, L. S., contract surgeon, returned to Fort McDowell, Cal., from duty in the field, at Goldfield, Nevada.

Sanford, J. L., contract surgeon, returned to Fort Barrancas, Fla., from leave of absence for one month.

Daywalt, G. W., contract surgeon, granted leave of absence for two months, about February 1.

Thorp, C. W., contract surgeon, granted leave of absence for sixteen days.

Marion, G. L., contract surgeon, ordered to San Francisco, Cal., for annulment of contract.

O'Day, S. F., contract surgeon, ordered to Fort Wadsworth, N. Y., for temporary duty.

Bastion, J. E., contract surgeon, ordered to accompany the 23d Infantry from Madison Barracks, N. Y., to San Francisco, Cal., and proceed thence to Fort D. A. Russell, Wyo., for duty.

Hadra, Frederick, contract surgeon, ordered to accompany the 23d Infantry from Madison Barracks, N. Y., to San Francisco, Cal., and proceed thence by first available transport to Philippine service.

Cullen, C. W., contract surgeon, relieved from duty at Fort Sam Houston, Texas, ordered to accompany the 23d Infantry from Fort Ontario, N. Y., to San Francisco, Cal., and proceed thence by first available transport to Philippine service.

Walker, T. C., contract surgeon, ordered from Ashboro, N. C., to Fort Oglethorpe, Ga., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 18, 1908:

Orvis, R. T., surgeon, ordered to the Naval Recruiting Station, St. Louis.

Verner, W. W., P. A. surgeon, detached from the Naval Recruiting Station, St. Louis, and ordered to the Naval Training Station, San Francisco.

Cather, D. C., asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the *Lancaster*.

Spear, J. C., medical director, retired, detached from duty at the Marine Recruiting Station, Philadelphia, and ordered home.

Biddle, C., surgeon, ordered to duty at the Marine Recruiting Station, Philadelphia, and to additional duty in attendance on officers not otherwise provided with medical aid in that city.

Russell, A. C. H., surgeon, detached from the Naval Torpedo Station, Newport, R.I., and ordered to the Naval Recruiting Station, Chattanooga, Tenn.

De Lancy, C. H., surgeon, detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the Navy Yard, New York.

Dennis, J. B., surgeon, detached from the Naval Hospital, Puget Sound, Wash., and ordered to the *South Dakota*.

Parker, E. G., surgeon, detached from the Naval Hospital, New York, and ordered to the *California*.

Dunbar, A. W., surgeon, detached from the *California* and ordered to the *Relief*.

Bagg, C. P., surgeon, detached from the *Philadelphia* and ordered to command the Naval Hospital Puget Sound, Wash., and to additional duty at that yard.

Angwin, W. A., P. A. surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Philadelphia*.

Jacobson, L. C., acting asst.-surgeon, ordered to the Naval Hospital, Norfolk, Va.

Public Health and Marine-Hospital Reports.

List of changes of station and duties of commissioned and non-commissioned omcers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 15, 1908:

Stoner, G. W., surgeon, granted leave of absence for 3 days from Jan. 8, 1908, under Paragraph 189, Service Regulations.

Brooks, S. D., surgeon, directed to proceed to Randburg, Cal., for special temporary duip, on completion of which to rejoin his station at Los Angeles, Cal.

Berry, T. D., P. A. surgeon, granted leave of absence for 2 months from Jan. 1, 1908.

Earle, B. H., P. A. surgeon, granted leave of absence for 15 days from Jan. 14, 1908.

Spratt, R. D., asst.-surgeon, granted an extension of leave of absence for two days.

Spratt, R. D., asst.-surgeon, granted leave of absence for 21 days from Jan. 14, 1908.

Chapin, C. W., asst.-surgeon, relieved from duty at Detroit, Mich., and directed to proceed to Seattle, Wash., reporting to P. A. Surgeon Cofer for special temporary duty.

Cheney, E. L., acting asst.-surgeon, granted leave of absence for 14 days from Jan. 31, 1908.

Ransom, S. A., acting asst.-surgeon, excused from duty, without pay, for 12 days from Dec. 5, 1907.

Stevenson, J. W., acting asst.-surgeon, excused from duty, without pay, for three months from Jan. 6, 1908.

BOARD CONVENED.

A board of medical officers was called to meet at Seattle, Wash., Jan. 16, 1908, for the purpose of examining aliens suspected to have trachoma. Detail for the board: P. A. Surgeon L. E. Cofer, chairman; P. A. Surgeon M. J. White, and Acting Asst.-Surgeon F. R. Underwood, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 17, 1908:

SMALLPOX—UNITED STATES.

California: San Francisco, Dec. 21-Jan. 4, 16 cases.
Illinois: Alton, Dec. 23-30, 1 case; Danville, Dec. 30-Jan. 6, 1 case; Springfield, Dec. 26-Jan. 9, 29 cases.
Indiana: Elkhart, Dec. 28-Jan. 4, 1 case; Muncie, 1 case.
Kansas: Kansas City, Dec. 28 Jan. 4, 1 case, imported.
Kentucky: Covington, Dec. 28-Jan. 11, 6 cases.
Louisiana: New Orleans, Dec. 28-Jan. 4, 1 case.
Massachusetts: Fall River, Dec. 28-Jan. 4, 3 cases.
Michigan: Grand Rapids, Dec. 28-Jan. 4, 1 case; Saginaw, Dec. 21-28, 5 cases.
Minnesota: Winona, Dec. 28-Jan. 4, 1 case.
Missouri: Kansas City, Dec. 28-Jan. 4, 5 cases; St. Joseph, Dec. 14-28, 2 cases; St. Louis, Dec. 28-Jan. 4, 3 cases.
Montana: Helena, Dec. 1-30, 2 cases.
Nebraska: Nebraska City, Dec. 21 28, 1 case.
New York: Schenectady, Dec. 1-31, 2 cases.
Ohio: Lorain, Dec. 28-Jan. 4, 2 cases, imported.
Oklahoma: Oklahoma City, Dec. 21-28, 7 cases.
South Dakota: Sioux Falls, Dec. 28-Jan. 4, 1 case.
Tennessee: Nashville, Dec. 28-Jan. 4, 6 cases.
Texas: Laredo, Jan. 9, 1 case, imported; San Antonio, Dec. 21-28, 2 cases.
Washington: Spokane, Dec. 21-26, 13 cases; Tacoma, Dec. 21-Jan. 4, 8 cases.
Wisconsin: Milwaukee, Dec. 21-28, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Oct. 15-21, 67 deaths; Nov. 1-30, 147 deaths.
Canada: Winnipeg, Dec. 28-Jan. 4, 3 cases.
China: Amoy (Kulangsu), Nov. 8-23, present; Shanghai, Nov. 24-Dec. 1, 2 cases, 12 deaths, cases foreign, deaths native.
France: Paris, Dec. 14-21, 7 cases.
Italy: General, 160 cases.
Japan: Kobe, Dec. 7-14, 149 cases, 24 deaths; Yokohama, Nov. 30-Dec. 7, 8 cases.
Java: Batavia, Nov. 23-30, 3 cases.
Mexico: Aguas Calientes, Dec. 28-Jan. 4, 1 death; Monterey, Dec. 21-29, 1 death.
Peru: Lima, Dec. 11, 26 cases, in hospital.
Russia: Odessa, Dec. 7-14, 7 cases, 4 deaths; Riga, Dec. 14-21, 9 cases; St. Petersburg, Dec. 7-14, 12 cases, 1 death.
Siberia: Vladivostok, Nov. 21-28, 4 cases.
Spain: Seville, Nov. 1-30, 1 death; Valencia, Dec. 15-29, 42 cases, 2 deaths; Vigo, Dec. 14-21, 2 deaths.
Turkey: Bagdad, Nov. 16-30, 76 cases, 14 deaths.
Venezuela: La Guaira, Dec. 7-Jan. 4, present.

YELLOW FEVER.

Cuba: Cienfuegos, Jan. 9, 1 case, on schooner *Mercedita;* Santiago, Jan. 15, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 8-16, 6 cases, 6 deaths.

CHOLERA—FOREIGN.

Japan: Osaka, Dec. 7-14, 5 cases, 5 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Jan. 7, 1 case.

PLAGUE—FOREIGN.

Chile: Africa, vicinity of, Dec. 16, present.
Egypt: Alexandria, Dec. 5-12, 5 cases, 3 deaths; Port Said, Dec. 7-14, 1 case; Provinces, Assiout, Dec. 11-18, 7 cases, 6 deaths; Dakalieh, Dec. 10-17, 3 cases, 2 deaths; Garbieh, Dec. 5-12, 4 cases, 3 deaths.
Japan: Osaka, Dec. 7-14, 24 cases, 20 deaths.
Peru: Callao, Dec. 7-14, 1 case; Lima, 3 cases; Paita, 5 cases, 5 deaths; Piura, 2 cases; Truxillo, 1 case.
Turkey in Europe: Kavak, in quarantine station, Dec. 26, present.

Book Notices

MODERN MEDICINE: Its Theory and Practice. In Original Contributions, by American and Foreign Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. III. Infectious Diseases (Continued). Diseases of the Respiratory Tracts. Pp. 160. Price $7.50. Philadelphia: Lea Brothers & Co., 1907.

This volume is divided into two parts, one being devoted to the infectious diseases not covered by Volume II and the other to the diseases of the respiratory tract. Malta fever is described by Col. David Bruce of the British army, the discoverer of *Micrococcus melitensis*. Beriberi is presented by Maximilian Herzog, who has made personal investigation of this disease in Manila and Japan, but without demonstration of any beriberi microbe. Anthrax, rabies and glanders are discussed by Ravenel; tetanus by Anders; gonococcus infections by Cole, who gives a good and much needed statement of gonococcal vaginitis in children; leprosy by Dyer. Tuberculosis is divided, E. R. Baldwin giving the history and etiology; W. G. MacCallum the pathologic anatomy, and Lawrason Brown the symptoms, diagnosis, prognosis, prophylaxis and treatment; these are exceptionally strong and valuable articles and the tuberculin treatment is given full and timely consideration. Osler and Churchman treat exhaustively of syphilis, and Thomas R. Boggs presents febricula, glandular fever, infectious jaundice, miliary fever, Rocky Mountain fever, psittacoses, milk sickness and foot and mouth disease, all of which are considered with great clearness and historical detail. T. R. Brown discusses mechanics of respiration and of respiratory diseases; F. R. Packard the diseases of the nasopharynx, pharynx and tonsils; W. P. Dunbar, the discoverer of "pollantin," hay fever; H. S. Birkett the diseases of the larynx; A. M. McPhedran the bronchi; H. A. Hare the lungs; F. T. Lord the pleura; W. P. James pneumothorax, and H. A. Christian the mediastinum. It may be that Dunbar in his directions as to "pollantin" does not regard sufficiently the possible danger of the development in persons using this serum of serum anaphylaxis. As in previous volumes there is great inequality in the matter of references. Standard abbreviations are not employed, the names of the same journals being given in a variety of anomalous forms, and there is no typical arrangement of the references. Journals publishing two volumes yearly are often cited merely by the year. That so important a feature of a work like this as references to the literature should receive such stepmotherly attention by the editors is simply incomprehensible.

THE LABYRINTH OF ANIMALS, Including Mammals, Birds, Reptiles and Amphibians. By Albert A. Gray, M.D. (Glas.), F.R.S.E., Surgeon for Diseases of the Ear to the Victoria Infirmary, Glasgow, Volume I. With Stereoscope Attached. Cloth. Pp. 198. Price, $8.40. London: J. and A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1907.

This beautiful volume is the result of seven years' work by the author on the labyrinth of vertebrates. The book is of special value to the comparative anatomist and student of evolution, and the chapter on the significance of anatomic differences in the labyrinths of animals is of unusual interest. It includes the primates, cheiropters, carnivora, ungulata, edentata and most of the rodentia. The second volume, we are informed, will deal with the rest of the rodents, the insectivora, the cetacea, the sirenia, the marsupialia, the monotremata, as well as the birds, reptiles and amphibia. Fishes have been omitted as having been completely described by Retzius and other anatomists.

For the instruction of the laboratory worker exact directions are given as to the method of making the preparations and of taking the photographs. Briefly, the labyrinth is injected, as soon as possible after death, through the oval window with a 5 to 10 per cent. formalin solution. Following this alcohol, ether, celloidin, xylol and paraffin are used during several weeks, and finally the bone surrounding the labyrinth is decalcified and removed and the latter photographed stereoscopically. The photographed labyrinth, when viewed through the small stereoscope which accompanies the book, stands out as if made of spun glass. Some idea of the great value of the book may be had when we remember that the photographs of semicircular canal, vestibule, ampulla, cochlea, etc., are exact representations of the originals, each one in its proper relation to the others, and therefore of much greater worth than the composite pictures made from sections which adorn the pages of the ordinary anatomic atlas. This is particularly true of the membranous labyrinth. It is also not improbable that the investigation of the pathologic changes which cause deafness, tinnitus, etc., made possible by the author's preparation method may be productive of results of therapeutic value.

PRINCIPLES AND PRACTICE OF MODERN OTOLOGY. By John F. Barnhill, M.D., Professor of Otology, Laryngology and Rhinology, Indiana University, School of Medicine, and Ernest D. Wales, B.S., M.D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University, School of Medicine. Pp. 575, with 305 Illustrations. Cloth. Price, $5.50. Philadelphia: W. B. Saunders Co., 1907.

On glancing through this handsome and well-printed volume of 575 pages the reader can not but admire the beautifully executed illustrations, 305 in number, mostly new and all instructive. In this feature the book compares favorably with any in the market. In further endorsement it must be said that its teaching is sound throughout and up to date. The strongest chapters are those on suppuration of the middle ear and the mastoid cells and the intracranial complications of ear disease. The good judgment in this—the essentially surgical part of the work—and the plain way of directing the treatment and the operations for these important diseases stamp the book a trustworthy advisor to students and practitioners. But in other respects the present volume offers no advantage over many other good text-books in the market. There is no originality in experience or presentation. It might be more concise and often more forcible in the manner of presentation. This is especially true of the chapter on anatomy. The pathology is quite meager throughout and sometimes insufficient. Even in the clinical descriptions outside of the pyogenic diseases the book is not as complete as some similar treatises. We notice, for instance, the omission of reference to epidermis plugs of the external meatus. The influence of nasal diseases in the causation of ear involvement is not sufficiently emphasized, although the relation of the pharynx is well described. Yet notwithstanding these defects the book will rank as a reliable guide for the student of otology.

A TEXT-BOOK OF BOTANY AND PHARMACOGNOSY. Intended for the use of students of pharmacy, as a reference book for pharmacists, and as a hand-book for food and drug analysts. By Henry Kraemer, Ph.B., Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory, in the Philadelphia College of Pharmacy; Member of the Committee of Revision of the Pharmacopeia of the United States of America. Illustrated, with 321 plates, comprising over 1,500 figures. Second edition. Price, $5.00. Philadelphia: J. B. Lippincott Company, 1907.

This book is devoted to the study of the recognition of plant drugs. The author is an experienced teacher, a botanist of recognized ability, and an expert pharmacognosist. The book is the second edition of a much smaller volume, but it has been almost entirely rewritten and brought up to date in every way. The author's name being sufficient guarantee that its subject matter has been selected with great care, the book should be in the library of every progressive pharmacist and food and drug analyst. The chapter devoted to the examination of powdered vegetable drugs and foods is especially valuable; Dr. Kraemer is a leader in this field of investigation and the chapter devoted to this subject gives much evidence of the careful, painstaking work for which he is known.

MEDICAL AND SURGICAL KNOWLEDGE OF WILLIAM SHAKESPEARE. By John W. Wainwright, M.D. Cloth. Pp. 78. New York: Published by the Author.

No one individual's works have been studied as have those of Shakespeare, or have been analyzed as to their bearing on such a variety of human interests. Medicine, law and theology; science, art and literature, all find their place in his works. Dr. Wainwright has been delving for that which refers to medicine and this monograph contains the result of his delving. The author does not claim to have appropriated all that Shakespeare wrote on medical subjects, but he has certainly gotten together a large and varied assortment of interesting quotations. The selections are grouped under the headings: Medicine, Surgery, Mental and Nervous Diseases, Obstetrics, Therapeutics, Anatomy, Physiology, Hygiene and Dietetics, Ethics and Medical Jurisprudence. Running comments add interest and aid in bringing out points or ideas that

a cursory reading might fail to catch. Medical men who are lovers of Shakespeare—and there are few who are not—will find in these selections both amusement and instruction. The book is tastefully and beautifully printed and bound, and contains a good photogravure reproduction of the Droeshout portrait of Shakespeare.

BLOOD STAINS: THEIR DETECTION AND THE DETERMINATION OF THEIR SOURCE. By Major W. D. Sutherland, M.D. Pp. 167. Cloth. New York: William Wood & Co., 1907.

The subject matter is divided into ten chapters, treating of the solubility of blood stains, the chemical tests for blood, the spectroscope in the detection of blood stains, the microscope in the detection of blood stains, and the biologico-serologic tests for blood stains. Each of these subjects is discussed from the standpoint of one who is thoroughly familiar with the development of the technic, with the fallacies of the tests in question, with the application of the tests to forensic purposes, and with the proper interpretation of a positive test. This last phase of the subject is particularly well treated. There can be little question that any test for the presence of blood stains must be considered reliable only when the factors influencing its appearance or non-appearance are perfectly understood. For instance, the old guaiac test for blood reacts with so many substances, other than blood, that its value must be considered only in its negative phase.

It is in the chapters on the serologic tests for blood stains that one will find the most interesting and valuable reading. These tests are comparatively new, but are now recognized as invaluable and specific tests in the recognition of the source of a suspected stain. The precipitin test and the complement deviation test are, as Sutherland shows, the only ones which can at present be used and relied on for forensic purposes. The book is well arranged, is written in a clear, concise style, and should find a place in the working library of every one who is called on to decide as to the origin of a suspected stain. Its scope is wide and its conclusions definite. An excellent bibliography serves the purpose of enabling the worker to make ready reference to original articles when desired.

A REFERENCE HAND-BOOK OF OBSTETRIC NURSING. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity Hospital. Leather. Pp. 258, with illustrations. Price, $1.75. Philadelphia: W. B. Saunders Co., 1907.

This is a practical little book though more space is given to the physiology and management of pregnancy than is necessary in a handbook of obstetric nursing. The chapter on care of bottle-fed infants and the methods of preparing the food is simple and practical.

Miscellany

SANITATION IN CUBA.

Description of the Status of Sanitation in the Republic of Cuba.

HAVANA, CUBA, Oct. 31, 1907.

To The Provisional Governor:

Sir:—I have the honor to forward herewith the report of the chief sanitary officer of the Republic of Cuba, which gives a history of the work of the department during the past year and, as an introduction thereto, a brief statement of its organization and operations antecedent to the date of intervention. Attached to his report is that of the executive officer, showing the internal organization of the central office and the dispatch of business of its numerous divisions.

There can be no doubt that the delay in organizing the National Sanitary Service after the establishment of the Cuban Republic, as well as the loss of the sanitary chiefs by the withdrawal, on May 20, 1902, of the American officers who had been engaged in that work, made an unfortunate relapse in sanitary work throughout the island, but less in Havana than elsewhere, and that the former standards were never entirely regained. This is well shown by the reports which were called for from all local health officers a year ago. All of them told the same story of inadequate appropriations and gross sanitary neglects. A considerable number contained the statement that all sanitary services in the municipality were at an end. But the essential defect of sanitary administration was more deeply fixed, and was a part of the failure of the scheme of autonomous municipal government which had been adopted for Cuba.

It is not proposed to discuss the reasons for this failure further than to say that it was, to a considerable extent, financial and due to a defective scheme of taxation. Thus the sanitary services of the smaller towns were both ill supported and ill administered. That of the City of Havana was supported from the national treasury with lavish liberality and was very efficient.

The Cuban government had also contributed to the sanitary expenses of fourteen other cities, in the budget of the fiscal year 1906-7, the sum of $652,000. An additional item of $200,000 appears in the appropriation for the office of the Secretaría de Gobernación, which was to be expended for the sanitation of cities, at the discretion of the executive. The Cuban congress also made appropriations for a number of very important sanitary undertakings, such as aqueducts and other works of a sanitary nature. It is evident, therefore, that the important sanitary work of the island was supported by the national treasury rather than by the municipal governments, as was the intention of the law. The entire failure of the latter in this respect was well recognized in Cuba, and several laws were proposed in the Cuban congress looking to the nationalization of the municipal sanitary services. One measure, at least, contemplated the establishment of a secretaryship of public health, which would include also the Department of Beneficencia, which, like the Department of Sanitation, was governed by a superior board and was intended to be autonomous, but which had suffered incorporation into the Secretaría of Gobernación. This complete inclusion exposed both departments alike to injurious bureaucratic and political influences, from which they were intended by their form of government to be protected.

Public opinion in Cuba was, therefore, ripe for the assumption by the state of the entire control in matters of municipal sanitation, which was effected by decree No. 894, signed August 26 of this year.

The principal objects accomplished by this law are:

1. The abolition of the municipal boards of health and the transfer of all powers previously vested in them to a national official, the local sanitary officer, who is appointed by the highest executive authority.

2. The assumption by the state of the cost of all municipal sanitary works and services, with the proviso that the municipal governments shall refund to the state, in consideration thereof, one-tenth of their total incomes for each year.

3. An increase in the powers of the chief sanitary officer, who is made, in fact, the administrative authority of the department. The Superior Sanitary Board is at the same time reduced in number and authority, a majority of its members being members *ex officio* of the National Sanitary Board. The rôle of the new National Sanitary Board will be rather advisory than administrative.

The yellow-fever situation has been so fully discussed in the report of the chief sanitary officer that only a little additional comment is necessary. From appendix No. 8 it will be observed that the short, but sharp, little epidemic of the last three months of 1905 was limited to Havana. In the fall of 1906 it again invaded Havana, having obtained an earlier start, but was brought under control somewhat earlier. It also began to invade the rural municipalities.

The feature of this year's invasion is the perfect control of the disease in Havana, although frequently introduced. For cogent reasons no effort has been made to prevent the importation of cases from other foci in the island, and reliance has been placed on the prompt recognition and report of the cases with local fumigations, and particularly on continuous and thorough mosquito work which has kept the city so free from stegomyia mosquitoes that the disease is not able to spread. A sharp epidemic at Cienfuegos, of which the first recognized cases occurred early in August, was handled with such vigor and success that, six weeks after the organization of the campaign against it, the city was clean of cases, and only two additional cases, originating in Cienfuegos, have occurred since the end of September.

Conquered in the centers of population, the disease has adopted revolutionary tactics and taken to the woods, and this extension to the small towns, villages and plantations brings up new and troublesome problems.

It is certain that the work against yellow fever in Cuba is equally thorough in detail and on a wider scale than that conducted in Havana and the other more important cities in 1901.

Why is it not followed by the same prompt success and why did yellow fever at that time not hang on in the rural districts? The disease having been so long endemic in Cuba, the native Cuban population was then truly an immune one, and yellow fever rarely prevailed in the interior, but lay in

wait in the seaports for the non-immune immigrants—who were, as a rule, not long in receiving either immunity or death. But since 1900 this process has been checked, and the non-immune population of Cuba has increased with great rapidity. The number of immigrants, chiefly Spanish, has averaged nearly 30,000 a year; in the last two years amounting to 88,000, and the white native population is also increasing with great rapidity. Accepting the doctrine of Guiteras, that the white Cuban child is born non-immune (and the evidence in its favor is steadily accumulating), this still greater source of supply of non-immunes must be added.

The number of non-immunes has already become sufficient to support a yellow-fever epidemic in almost any town or large plantation in the island, and the increase of the facilities for communication by rail and by the construction of good public roads, together with the migratory habits of the Spanish laborers, furnish a ready means for the distribution of the infection, which means existed to a far less degree six years ago. The sanitary forces have pursued the enemy into the country, and wherever a case of yellow fever has been recognized expert diagnosticians and brigades of men trained in the technic of fumigation and mosquito work have been sent from Havana to conduct operations against the enemy. These methods have kept the infection from assuming great proportions, but have so far failed to extinguish it. The reasons for this failure are two: The first is the lack of agencies for the discovery and reporting of cases outside of the large cities; the second, the lack of trained men to carry out carefully and conscientiously and thoroughly the work of mosquito prevention.

Nothing is more difficult than the recognition of mild cases of yellow fever. Cases constantly occur in patients coming into the hospitals of this city which puzzle the Board of Diagnosis of Contagious Diseases, probably the most distinguished body of experts in the knowledge of this disease in the world. Also it must be borne in mind that the majority of cases, and probably in Cuban children a very large majority, are mild and difficult or impossible of diagnosis, with the help of all the resources of medical science. But in the rural municipalities little attention is paid to attacks of fever which are mild or of short duration, and the physicians are not accustomed to employ the diagnostic aids of urinalysis and blood examinations, and usually have not the apparatus and technical training for so doing. Therefore, only the minority of grave or fatal cases are recognized and reported, and the infection spreads, unchecked by preventive measures, until a death gives the alarm. So unaccustomed are the majority of Cuban physicians to consider any Cuban non-immune that even when the fact is admitted in theory it is rarely acted on in practice—and cases of grave illness and even death from this disease are not infrequently diagnosed in this office only by the light of subsequent cases.

While this office can send trained parties to direct works of fumigation in recognized foci, the fundamental protection work of mosquito prevention requires permanent garrisons of trained men in every town and village and even in the great sugar and tobacco plantations.

Such a plan of campaign can be conducted where the area is small and the pecuniary resources practically unlimited, as in the strip ten miles wide and fifty miles long which constitutes the Canal Zone at Panama, but it is, of course, out of the question for the 44,000 square miles of Cuban territory and far beyond the resources of the Cuban treasury, for which, besides, this sanitary war is a matter quite secondary in importance to the great administrative works of government. It is believed, however, to be not beyond the limits of reasonable expenditure to carry on a vigorous mosquito war for the next six months in every city, town, village and plantation in which the disease has appeared this year, and this the new national sanitary organization, now being put into effect, will give the machinery for conducting. The smaller towns will be taught the technical detail of mosquito work by frequent visits of inspection, and this will be aided by the more efficient conduct of the sanitary services of street cleaning, removal of garbage, etc., which are to be expected under the new organization. This will require operations in twenty-nine distinct localities.

The importance of the yellow-fever campaign has not been allowed to entirely overshadow other sanitary work, of which the prevention of tuberculosis in the larger cities, and especially in Havana, is most important. This disease constitutes for the Cuban population the most formidable of all infectious diseases and causes more fatalities than all the other infectious diseases combined. Its alarming prevalence must be ascribed mainly to the excessive overcrowding which exists among the poorer classes in the cities, which evil is aggravated by their traditional fear of the night air, causing them to cut off ventilation as far as possible in the rooms where they sleep. The remedy for these conditions is to be found in the construction of sanitary dwellings at low rents, together with the social and sanitary education of the people. The latter is now being undertaken in connection with the dispensary for tuberculosis maintained by the department in this city, which has been entirely reorganized during the past year; by requiring the physicians connected with it to make domiciliary visits to all patients at their homes, and to instruct them in the methods of preventing infection and in the importance of abundant fresh air and cleanliness. A sanatorium for incipient cases has also been established in a good, elevated location, not far from this city.

Bovine tuberculosis is, fortunately, quite rare in Cuba, and on this account, and also because of the practically universal custom of boiling the milk in order to preserve it, milk can, contrary to the popular belief, be practically excluded as a source of tubercular infection.

It is thought to be unnecessary to invite the attention of the provisional governor to the importance of obtaining as rapidly as possible a water supply and sewer systems for the Cuban cities, as he has already demonstrated his interest in sanitary works of this character. I can not refrain, however, from adding my recommendation to that of Dr. Finlay, for the execution of the plan adopted and contracted for six years ago for the sewering of Havana, and that more recently adopted for securing the imperatively needed water supply and sewer systems for Cienfuegos. Whether existing contracts are in all respects desirable and advantageous to the public is not a matter for the determination of the sanitary authorities, but as to the necessity for the proposed works there can be no question.

J. R. KEAN,
Adviser to Sanitary Department.

Increasing the Efficiency of the Medical Department of the Army.

The report of the Secretary of War is just out, and from it we reproduce what Mr. Taft says on the Army medical bill:

ADDITIONAL OFFICERS FOR THE MEDICAL DEPARTMENT.

"A profound conviction of the importance of the subject makes it my duty again to call attention to the inadequate provision which the law as it now exists makes for the Medical Department of the Army. While much has been done since the Spanish War in the direction of enlarging and modernizing our Army, no proper provision has yet been made, although the matter has been repeatedly called to the attention of Congress, for bringing the Medical Department into a condition of strength and effectiveness that would enable it to meet the responsibilities and perform the service that would be exacted of it in time of war.

"The paramount service which a medical corps renders in modern warfare consists largely in sanitary precautions and health measures that will reduce the amount of disease among the troops to a minimum and prevent the effective fighting strength of the Army from being unnecessarily lessened from this cause. The great importance of such service for the Army of the United States in any war in which it will ever be engaged can not be too strongly emphasized, because in such an event our armies will always consist in the main of volunteers, who naturally do not fully realize the immense importance of safeguarding their health and taking care of their physical condition, and if they did, are not trained in the matters that are essential for that purpose.

"The failure to make proper and adequate provision for caring for the health and comfort of the volunteer forces in time of war—and this can only be done by creating a sufficiently large body of competent surgeons with military knowledge and training—not only needlessly prolongs the struggle and involves the country in expenditures of money far in excess of the actual cost of making proper provision in advance, but, most deplorable of all, brings anxiety and sorrow to households all over the land and condemns many a promising youth to unnecessary suffering and possibly to a premature grave.

"A bill to promote the efficiency of the Medical Department was passed by the Senate at the last session, but having failed to come to a vote in the House of Representatives, the Medical Department remains with the same defective organization and urgent needs described in my last report.

"The want of sufficient inducement in the way of pay and promotion caused six young medical officers, among the ablest and most promising in the corps, to resign from July 1, 1906, to July 31, 1907. It also made it impossible to secure more

than ten suitable candidates for the last session of the Army Medical School. The result is that there are now twenty-three vacancies in the Medical Department.

"To make up the very inadequate number of regular medical officers, 176 civilian physicians are employed under contract. These so-called contract surgeons have but little, if any, military training or knowledge of the special duties devolving on medical officers in the field, while the professional qualifications required for them are distinctly below those demanded of the regular medical officer. But at the present time, fifty-five of our garrisoned posts in the United States and Alaska, as compared with forty-two last year, are entirely under the medical care of contract surgeons; this means that a large proportion of our troops are deprived of the benefit of the medical services to which they are entitled at the hands of our specially educated medical personnel.

"It is also worth noting that, as a result of this condition, the government has been put to considerable expense in transferring patients to general hospitals and to larger posts, where regular medical officers are stationed.

"The prime importance of scientific sanitation and hygienic measures in modern warfare has been repeatedly demonstrated. The instrumentality for accomplishing this work can not with safety be hastily improvised under the spur of impending necessity. The selection of suitable men for the Medical Department and their efficient military training is a gradual process which takes years of hard and conscientious work. Under the existing organization it would be impossible to prevent a breakdown of the Medical Department in case of war involving the mobilization of volunteer forces, nor would it be possible to spare the necessary regular medical officers to apply in these volunteer forces the modern sanitary measures so vital to the health and efficiency of troops, without which unnecessary suffering is produced and disaster invited.

"Inasmuch as these serious defects in the organization of the Medical Department can only be corrected by legislation, and as the matter presented is one that can not safely be postponed, it is earnestly urged that the bill to promote the efficiency of the Medical Department passed by the Senate in each of the last three sessions of Congress receive the favorable consideration of Congress during the present session."

More About Viavi.—The following letter, which has come into our hands addressed by the Northern Ohio Viavi Co. to one of its agents, may be of general interest for more than one reason, and therefore we have decided to publish it. In the first place, it forms a sidelight on the motives of those who are so energetic in denouncing the American Medical Association as a "trust." The more of such "ordinary methods of medical ways and attempts of cure" as the "Viavi" fake that can have the public opinion "offset" against them, the better for the public health and the general welfare. This wonderful piece of charlatanry was very fully exposed by the *California State Journal of Medicine*, in April, 1907, and the exposure was further circulated in abbreviated form in THE JOURNAL, April 27, 1907,—whence, we suspect, comes the vituperation of the Association as a "trust." We are sure that our readers will be much interested in the disclosure of the method by which "letters from cures" are obtained. Write out the testimonials yourself and wheedle the puppet into signing them—even initials will do—as you wheedled her into paying $75 for perhaps 50 cents' worth of material. Simple, isn't it; seeing that there are so many simpletons in the world to practice on?

THE NORTHERN OHIO VIAVI CO.
CLEVELAND, Oct. 18, 1907.

Mrs. ————————, ————————,

Dear Madam:—Do you believe in a trust? You know a trust is a concern controlling the price or prices of an article and its output, no matter whatever it may be, and also in a large measure controls the production. One of the largest trusts or one of the most far-reaching is the American Medical Association, which doctors themselves, with whom we have talked, acknowledge to be a combination of physicians and surgeons in the United States for the purpose of helping each other and destroying competition. There are about 20,000 men in this corporation, and for the past year or two they have been spending a great deal of money in their endeavors to offset public opinion against the ordinary methods of medical ways and attempts of cure.

In your rounds we think you will find it illuminating if you will talk with intelligent people and get their opinions of doctors in general. The writer has done so, and it is surprising the prejudice that arises against physicians in general..

Rabbi Silberman's recent address, of which you have a copy, is a good example of the way the wind is blowing. It is not necessary for Viavi representatives to stir up disputes and strife, but a worker can carefully give information in regard to this Medical Association and some of its methods and do no harm. In fact, the more people know of it, the more they will be inclined to think favorably of Viavi.

We would like to have a few new letters from your cures, or even from women who are vastly improved, and perhaps a suggestion from us will assist you in getting these letters. Do not be satisfied to simply try to get a cure to give you a letter, but write out yourself a letter, such as you think covers the case, briefly yet fully, and submit it to her for her signature, and then if there are any changes they can be easily made. To some women it is a distinct effort to sit down and write a letter of this nature, and they will continue putting you off until finally the matter is never accomplished. You know, of course, that we will supply you with a number of these letters printed on slips without charge. They will be of great help to you in your daily work. If your cure does not care to have her name given, she can merely sign her initials; that will be sufficient.

We had a particularly gratifying case in Cleveland not long ago. A Mrs. S., who had been married for a number of years, has had miscarriage after miscarriage, and finally, in depths of despondency, placed herself under the Viavi System of Treatment, and in less than a year she was delivered of a fine boy. She immediately sent her sister down to the office to advise us of the fact. We are making a collection of pictures of Viavi babies and, as soon as we can, add this to our gallery. We have never known yet of a Viavi baby that was sickly. Have you? Very cordially yours.

THE N. O. VIAVI CO.

Marriages

GEORGE W. BETZ, M.D., to Miss Dora Stier, both of Philadelphia, January 4.

RUFUS COLE, M.D., Baltimore, to Miss Annie Hegeler of La Salle, Ill., January 2.

ROBERT C. LEA, M.D., to Miss Henrietta Wright, both of Philadelphia, January 11.

HARRY W. SELLERS, M.D., to Miss Ethel Losey, both of Louisville, December 25.

FRENCH S. CAREY, M.D., El Paso, Texas, to Miss Edith Jones, at Baltimore, January 4.

DAVID RIESMAN, M.D., to Miss Eleanor L. Fleisher, both of Philadelphia, January 20.

JACOB L. HOFFMAN, M.D., to Miss Elizabeth Wagner, both of Ashland, Wis., January 8.

HARLAN DUDLEY, M.D., Canton, Ohio, to Miss Lulu Porter of Oberlin, Ohio, December 21.

HUGH M. FLETCHER, M.D., to CORA SECHRIST, M.D., both of Cleveland, Ohio, January 1.

B. L. ROBINSON, M.D., to Miss Maida McClelland, both of Meridian, Miss., December 31.

M. R. BYRNES, M.D., Crete, Neb., to Miss Alta Eager of Beaver Crossing, Neb., January 8.

ASAPH ARENT, M.D., Humboldt, Iowa, to Miss Bertha Heise of Algona, Iowa, December 31.

HENRY T. HUTCHINS, M.D., Baltimore, to Miss Elsie Hardenbergh of Minneapolis, January 4.

JOHN R. JOHNSON, M.D., Arcanum, Ohio, to Miss May Armstrong of Celina, Ohio, January 1.

MELVIN PAGE BURNHAM, M.D., to Miss Adeline Lydia Martin, both of New York City, December 22.

FREDERICK OLCOTT ALLEN, JR., M.D., Philadelphia, to Miss Sallie Owens Haskell of Savannah, Ga., January 8.

B. L. KINDEL, M.D., Springfield, Ohio, to Miss Eva Winter of Celina, Ohio, at Delphos, Ohio, January 1.

WILBERT MCINTYRE, M.D., Strathcona, Alberta, to Miss W. J. Harkley of Owen Sound, Ont., January 1.

GEORGE W. TEAGARDEN, M.D., Chambersburg, Pa., to Miss Edna Irene Giles of Kittanning, Pa., January 8.

JOHN R. PETERSON, M.D., Willmar, Minn., to Miss Thea Sophia Rolefson of Montevideo, Minn., January 1.

CHARLES ALLEN SAUNDERS, M.D., Norfolk, Va., to Miss Jennie Carter Cook of Columbus, Miss., January 15.

WILLIAM CHESTER SMITH, M.D., Glasgow, Ky., to Miss Pearle Hazelip of Smith Grove, Ky., in Tennessee, January 3.

JOHN W. ANGLE, M.D., Harrisonville, Mo., to Miss Bertha Barger of Nevada, Mo., at Harrisonville, December 29.

ALBERT HARVEY MILLER, M.D., Gladstone, Mich., to Miss Gertrude Adams of Sault Ste. Marie, Mich., December 31.

BERNARD MONTROSE CONLEY, M.D., Wilmette, Ill., to MINNIE AGNES HINCH, M.D., of Dunning, Ill., in Chicago, January 15.

ADDISON B. CLIFFORD, assistant surgeon U. S. Navy, Ypsilanti, Mich., to Miss Grace Kathleen Emmons of Detroit, January 1.

Deaths

John A. Comingor, M.D. New York Medical College, New York City, 1861; surgeon of the Eleventh Indiana Volunteer Infantry during the Civil War; one of the organizers of the Medical College of Indiana, Indianapolis, and for twenty years professor of surgery in that institution; for several years professor of orthopedic and clinical surgery in the Central College of Physicians and Surgeons, Indianapolis; surgeon general of Indiana during the administration of Governor Porter, died suddenly at the home of his daughter in Davenport, Iowa, January 7, from cerebral hemorrhage, aged 79.

Adrian Theodore Woodward, M.D. Vermont Academy of Medicine, Castleton Medical College, 1847; A.M. Middlebury College, 1857; a member of the corporation of Castleton Medical College until 1860, when he moved to Brandon, Vt.; surgeon of the Fourteenth Vermont Volunteer Infantry during the Civil War; for several years professor of gynecology in the Medical Department of the University of Vermont, Burlington; a member and some-time president of the Vermont State Medical Society and Rutland County Medical and Surgical Society; died at his home in Brandon, January 9, aged 80.

George Washington Jones, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1896; a member of the Iowa State Medical Society, and president-elect of the Lee County Medical Society; one of the most prominent practitioners of southeastern Iowa, and professor of surgery in the College of Physicians and Surgeons, Keokuk; who disappeared mysteriously from that city December 25, was found dead near Burlington, January 17, the death being due, according to the verdict of the coroner's jury, to wounds self-inflicted, while temporarily deranged from overwork, aged 32.

Edward Buncombe Goelet, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1888; of Saluda, N. C.; a member of the American Medical Association; one of the most prominent practitioners of North Carolina; died suddenly at the residence of his daughter in Brooklyn, N. Y., January 12, from acute dilatation of the heart, aged 64.

Alfredo Fernandez Blanco, M.D. Medical College of Seville, Spain, 1890; a member of the Medical Society of Porto Rico and of the Red Cross of Porto Rico; formerly health officer of Rincon; died at his home in Añasco, Porto Rico, August 15, from diabetes and tuberculosis, after an illness of one month, aged 46.

Henry James Hebb, M.D. Washington University School of Medicine, Baltimore, 1873; a member of the Medico-Chirurgical Faculty of Maryland and Baltimore County Medical Society; a Confederate veteran and at once time county treasurer and register of wills; died at his home in Randallstown, January 10, from paralysis, aged 65.

Frederick S. Thomas, M.D. Johns Hopkins University School of Medicine, Baltimore, 1878; a member of the American Medical Association; for many years in charge of the General Hospital, Charleston, W. Va.; one of the most prominent practitioners of that state; died at his home, January 7, from pneumonia, after a short illness, aged 57.

T. Ogier Hutson, M.D. Medical College of the State of South Carolina, Charleston, 1889; contract surgeon U. S. Army, on duty at the Army and Navy General Hospital, Hot Springs, Ark.; while on leave and en route to Yemassee, S. C., was killed January 9, by a fall from a Central Railway of Georgia train near Gordon, aged 38.

William H. Berry, M.D. Medical College of Ohio, Medical Department of the University of Cincinnati, 1867; local surgeon at Brookville, Ind., for the Big Four System, and a member of the National Association of Railway Surgeons; died at his home, January 11, from pneumonia, after an illness of two days, aged 67.

Gertrude Cornelia Crumb, M.D. Northwestern University, Woman's Medical School, Chicago, 1894; of Milton, Wis.; a member of the Medical Society of Wisconsin and Green Lake County Medical Society; died in a Milwaukee hospital, January 7, after an operation for the removal of gallstones, aged 42.

Rodney Telfair Trimble, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1868; a member of the American Medical Association, and one of the most prominent practitioners of Clinton County, Ohio; died at his home in New Vienna, January 3, from cancer of the stomach, aged 61.

James Green, M.D. Transylvania University, Medical Department, Lexington, Ky., 1842; for nearly fifty years a practitioner of Washington County, Ky.; of Parkland, Ky., died in the Deaconess Hospital, Louisville, from cardiac asthma, December 24, after an illness of two months, aged 85.

John William Austin, M.D. Baltimore Medical College, 1891; a member of the Medical Society of Virginia and Bedford County Medical Society; president of the Bedford City board of health; died at his home in that city, January 2, from pneumonia, after an illness of a week, aged 41.

Elias Kerner, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1850; a member of the legislature of North Carolina during the Civil War; died at the home of his son in Kernersville, N. C., July 22, after an illness of several months, aged 81.

Frederick C. Semolroth, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1873; formerly postmaster of Walnut Grove, Ill., but later of Peoria; died in St. Francis Hospital in that city, January 8, from cerebral hemorrhage, after a short illness, aged 70.

Martin Coffin, M.D. Long Island College Hospital, Brooklyn, 1875; a member of the Maine Medical Association and York County Medical Society; died at his home in Bar Mills, December 23, from cerebral hemorrhage, after an illness of ten days, aged 69.

Andrew Curtis, M.D. (Years of Practice, Mich., 1900); a veteran of the Civil War, and for 26 years an eclectic practitioner of Big Rapids, Mich.; died at his home, from cerebral hemorrhage, January 10, after an illness of three days, aged 54.

Moses C. Farrar, M.D. Hahnemann Medical College of the Pacific, San Francisco, 1873; for twenty-five years a practitioner of Healdsburg, Cal.; died at his home in that city, December 28, after an illness of several weeks, aged 77.

Frederick H. Foster, M.D. Hahnemann Medical College and Hospital of Chicago, 1872; a specialist on diseases of the eye and ear; died at his home in Chicago, January 18, from nephritis, after an illness of a year and a half, aged 56.

William C. Speece, M.D. Starling Medical College, Columbus, Ohio, 1884; formerly of Quincy, Ohio; for many years a surgeon on steamships in the Orient; died at Coramba, New South Wales, October 10, from pneumonia, aged 44.

Henry Rutherford Overton, M.D. College of Physicians and Surgeons in the City of New York, 1889; who had lived in Newfoundland since 1891; died at his home in Exploit Point, N. F., January 3, from heart disease.

William Ruser Prowell, M.D. Jefferson Medical College, Philadelphia, 1876; tax collector of Steelton, Pa., for two terms; died at his home in Steelton, January 7, from pneumonia, after an illness of two weeks, aged 53.

De Forest A. Reed, M.D. Kansas City (Mo.) Hospital College of Medicine, 1885; died at his home in Brookton, N. Y., January 6, from complications following pneumonia, after an illness of four months, aged 59.

Edward S. Stauffer, M.D. University of Pennsylvania, Medical Department, Philadelphia, 1902; formerly of Kansas City, Mo.; died at the home of his daughter in Marion, Kan., December 21, after a long illness.

Robert Fitz Smith, M.D. Kansas City (Mo.) College of Physicians and Surgeons, 1871; a Confederate veteran; died at his home in Richmond, Va., December 27, from paralysis, after an illness of 22 days, aged 61.

Jesse Nicholas Talbot, M.D. Miami Medical College, Cincinnati, 1875; a veteran of the Civil War; died at his home in Crawfordsville, Ind., January 5, from pneumonia complicating heart disease, aged 67.

Henry A. Coleman, M.D. Medical College of the State of South Carolina, Charleston, 1860; a member of the American Medical Association; died at his home in Mandarin, Fla., January 6, aged 70.

Louis Kern, M. D. Medical College of Indiana, Indianapolis, 1870; one of the oldest practitioners of Howard County, Indiana; died at his home in Kokomo, January 10, from senile debility, aged 76.

Charles D. De Witt, M.D. New York University Medical College, New York City, 1849; for many years a practitioner of Quarryville, N. Y.; died at his home in Katsbaan, N. Y., January 7, aged 80.

Louis Pease Blair, M.D. Kentucky School of Medicine, Louisville, 1877; a member of the American Medical Association; of McDonough, N. Y.; died in a hospital in Buffalo, January 12, aged 54.

David Allen Hoffman, M.D. Western Reserve University Medical College, Cleveland, Ohio, 1848; a pioneer practitioner of

Oskaloosa, Iowa; died at his home in that city, January 12, aged 82.

Daniel Sayer Hardenburgh, M.D. Albany (N. Y.) Medical College, 1863; surgeon of volunteers during the Civil War; died at his home in Jersey City, N. J., December 31, aged 67.

M. J. McElhaney, M.D. University of Buffalo (N. Y.) Medical Department, 1870; of Greenville, Pa.; died January 6, from pneumonia following influenza, after a short illness, aged 69.

Robert Harper Thaw, M.D. Miami Medical College, Cincinnati, 1873; died at his home in Sistersville, W. Va., November 24, from paralysis, after an illness of three years, aged 58.

George L. Stone, M.D. Hahnemann Medical College, St. Louis, Mo., 1878; died at his home in Richmond, Va., from heart disease, January 9, after an illness of seven weeks, aged 63.

Henry N. Karchner, M.D. Central College of Physicians and Surgeons, Indianapolis, 1899; died suddenly in his office in Indianapolis, from heart disease, January 12, aged 34.

Edward B. Atkins, M.D. Albany (N. Y.) Medical College, 1874; formerly of Saratoga Springs, N. Y.; died in the Denver County Hospital, January 8, after a prolonged illness.

Robert G. Gahrer, M.D. Eclectic Medical College of the City of New York, 1870; died at his home in Brooklyn, January 13, from nephritis, after a prolonged illness, aged 63.

Stephen Nicholson Murphy, M.D. Medical School of Harvard University, Boston, 1899; died at his home in Chelsea, Mass., from pneumonia, January 12, aged 35.

Thomas Wister White, M.D. Jefferson Medical College, Philadelphia, 1846; died at his home in Laurel Grove, Va., November 23, from senile debility, aged 83.

Joseph P. Welch, M.D. Texas Medical College and Hospital, Galveston, 1875; was found dead in bed at his home in Humboldt, Ariz., October 29.

McCurdy Bricker, M.D. Medical College of Indiana, Indianapolis, 1894; of Butler, Pa.; died recently, and was buried in Pittsburg, January 15.

Frederick Bese, M.D. Jefferson Medical College, Philadelphia, 1864; of East End, Pittsburg, died at his home, January 10, aged 84.

Claus E. Sjowall, M.D. University of Stockholm, Sweden, 1879; died at his home in Chicago, January 7, aged 55.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Progress in Ohio.

The January number of the *Ohio State Medical Journal* contains a department on medical economics. This is the first of the state journals to inaugurate such a feature. The attention of members of the auxiliary legislative committee of the state association is specially called to this department by the editor of the state journal, the intention being to pay particular attention to legislative matters.

In the same number appears a report of the Ohio League for the Suppression of Fraudulent Advertising. This association was formed at a meeting of the state medical association at Canton in May, 1906, its object being to enlist the medical men of the state, especially those interested in church work, in a protest against the use of religious publications by the American Proprietary Association for the "furtherance of the schemes of fakers and charlatans." The league took the position that the conditions then existing in the religious press were due to ignorance on the part of religious people and that the medical profession was responsible for this ignorance. Owing to lack of funds it was necessary to limit the campaign. On account of the fact that the general assembly of the Presbyterian church met last year at Columbus, it was decided to select the *Herald and Presbyter*, ostensibly a Presbyterian publication, but owned and published by Monford & Company, as the first object of reform. Accordingly 600 or 700 copies of the reprint of the articles by Samuel Hopkins Adams, as they appeared in *Collier's Weekly*, were sent out by the secretary, copies being sent to the members of the various presbyteries. The result was that these presbyteries adopted resolutions declaring in unmistakable terms that they would refuse endorsement to any church publication which refused to comply with their requests regarding advertising. As a result of the pressure brought to bear, the *Herald and Presbyter* to-day has clean advertising pages. A personal letter from the editor says: "We shall try to keep our paper free from fraudulent advertisements, medical and all other kinds." The *Interior*, another Presbyterian paper, published in Chicago, is stated to have only one objectionable advertisement, and the publishers say that the contract for this will not be renewed when it expires.

The league, in its report, urges every member of the Ohio State Medical Association to become a member, stating that the funds thus obtained would enable the league to send out at least 30,000 copies of the reprint of "The Great American Fraud." The report also states that the general distribution of this little pamphlet will settle the question of fraudulent advertising without any other literature being necessary.

Organization of the Profession in Belgium.

L. Merveille, editor of the *Gaz. Méd. Belge*, has long served as president of the National Medical Federation, and leaves no stone unturned to promote and solidify the organization of the profession in his land. In his last presidential address he reviewed the tasks before the profession which concerted action would carry to successful completion, and related the history of other movements which have already succeeded, to the honor of the profession, such as the popular lectures on the rearing of infants, which are now being delivered at various points to instruct the mothers. He remarked that the day is certainly coming when a phalanx of physicians will be employed at a just remuneration to enlighten the public systematically in regard to the dangers of alcoholism, syphilis, etc., and the means to avoid these diseases. He added that it is not enough to struggle, to struggle courageously and confidently; the struggle must be conducted systematically, according to a well-studied plan, to be truly effective. The local societies should discuss the great questions of general interest from their separate standpoints, and then the national association should gather up the various conclusions and submit them to further discussion between delegates from all points of the country, to study them from the general standpoint. The final conclusions of the national association should then be accepted by physicians everywhere, even although the conclusions may conflict with the interests of one or two here and there. He emphasized further that one of the most important factors in successful cooperation is that the decisions of the majority should be loyally accepted by the individual, quoting in conclusion:

Le courage fait des vainqueurs,
La concorde, des invincibles.

(Courage makes conquerors; concord makes invincibles.)

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

FIFTH MONTH.

FRACTURES AND DISEASES OF BONES.

First Weekly Meeting.

Anatomy of Bones.
Histology of Bone.
Periostitis: Pathology, Symptoms and Treatment.

Second Weekly Meeting.

Osteomyelitis: Etiology and Pathology.
Osteomyelitis: Symptoms and Treatment.
Caries of Bone, Necrosis of Bone.
Tumors of Bone.

Third Weekly Meeting.

Tuberculosis of Bone.
Syphilis of Bone.
Osteomalacia, Rickets.

Fourth Weekly Meeting.

Fractures: Varieties, Causes.
Fractures: Symptoms, Complications.
Fractures: Diagnosis, Treatment.

Fifth Weekly Meeting.

Fractures of Neck of Femur.
Pott's Fracture: Pathology, Treatment.
Colles' Fracture: Pathology, Treatment.

Monthly Meeting.

Principles in the Treatment of Fractures.
Tuberculosis of Bone.
Osteomyelitis.

FIRST WEEKLY MEETING.

Anatomy.

Classify bones as to shape. General structure of bone. (a) Physical, (b) chemical properties of bone. Demonstrate fresh specimen. Periosteum and its functions. Cancellous structure. Nutrient blood vessels. Influence on location of suppurative or tubercular degenerations. Lymphatic vessels. Distribution. Nerve supply of bone.

Histology.

Haversian system, its canals, lacunæ, canaliculi, etc. Contents of each. Demonstrate microscopic sections. Development of bone. Ossification in membrane. Ossification in cartilage.

Periostitis.

Most frequent cause. Usual termination. Pathology of non-suppurative periostitis. "Typhoid" periostitis. What bones involved. Usual pathology. Symptoms of periostitis. Diagnosis. Treatment of different stages.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, February 3. Secretary, Dr. S. L. Lee, Carson City.

NEW YORK State Board of Medical Examiners, Albany, February 4-7. Chief of Examinations Division, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State Capitol Building, Lincoln, February 5-6. Secretary, Dr. E. J. C. Sward, Oakland.

KANSAS State Board of Medical Registration and Examination, February 11. Secretary, Dr. D. P. Cook, Clay Center.

WYOMING State Board of Medical Examiners, Laramie, February 12-14. Secretary, Dr. S. B. Miller, Laramie.

Reciprocity Between New York and Vermont.—We learn from Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, that reciprocal relations in medical licensure have been established by that board with the Board of Regents of New York. New York now reciprocates with Michigan, New Jersey, Ohio and Vermont. Vermont has reciprocity with the District of Columbia, Illinois, Kentucky, Maine, Maryland, Michigan, New Jersey, New York, North Dakota, Ohio, Wisconsin and Wyoming.

A British View of Medical Teaching in America.—The *British Medical Journal*, Dec. 28, 1907, reviews the impressions of American medicine and medical schools by Dr. Rolleston, a recent visitor to this continent. Dr. Rolleston expressed the opinion that American schools are inclined toward German methods more than toward those of Great Britain. As a rule, there is more systematic work done in the clinical laboratories in this country, but a serious lack of routine ward work in the hospital. This lack he attributes to the fact that the majority of hospital patients are paying patients and, therefore, not willing to undergo examination by students. As compared with Great Britain the relation between the hospitals and medical schools is not so intimate. The danger is suggested that the thoroughness in the clinical laboratory examinations here may lead to less thoroughness in the routine physical examination of patients. Specialism is said to be more extreme here than abroad, and irregular sects in medicine, such as osteopaths and proprietors of "patent medicines," compete more here than elsewhere with the orthodox practitioner. The visitor, however, was favorably impressed with the amount of original research being done and departed with a firm belief in the future of American medicine.

Society Proceedings

COMING MEETING.

Med. Society of the State of New York, Albany, Jan. 28.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, held at St. Louis, Dec. 30-31, 1907.

(*Continued from page 232.*)

Acquired Atresia of the Common Duct Due to Gallstone.

DR. JOHN C. HANCOCK, Dubuque, Iowa, reported the case of a woman, aged 66, on whom he operated for an acquired atresia of the common duct due to gallstone. Patient left the table showing signs of shock and hemorrhage, and died fourteen hours later from complete exsanguination. A partial autopsy confirmed the findings at operation. The gall bladder was contracted to the size of an olive. The common and hepatic ducts were greatly enlarged. At the junction of the cystic and common ducts was found a cicatricial contraction of the cystic duct. In the bladder and duct were several small flat concretions. On removal of the large stone from the lower end of the common duct, the condition of atresia of this duct was discovered. The lower end of the duct was perfectly smooth, without a sign of opening into the duodenum and might be likened to the blind finger end of a rubber glove. Macroscopically, the liver presented the appearance of hypertrophic cirrhosis, but under the microscope the changes of atrophic cirrhosis were present. Macroscopic examination showed atresia of both the common duct and that of Wirsung. The duct of Santorini could not be found, and there was entire absence of the papilla on the duodenal side. Microscopically, the ductus choledochus, that of Wirsung, the pancreas and duodenum, show chronic inflammatory changes, but no malignant elements. Bile was present in the common duct. The stone was found to be a mulberry calculus, composed almost entirely of cholesterin, with the poles made up, superficially at least, of bile pigment and calcareous salts.

DISCUSSION.

DR. CHARLES H. MAYO, Rochester, Minn., said that he and his brother have done 2,200 operations on the gall bladder and ducts. Of this number, there are over 600 cholecystectomies, and about 300 operations on the common duct. A few years ago they had a leaning toward the removal of the gall bladder if there was any disease of the mucosa perceptible, while now they are inclined to leave the gall bladder if the cystic duct is open. The operation, however, of the removal of the gall bladder, as a secondary procedure, is not as serious as operations on the common duct which may be necessitated later, after the removal of the gall bladder. They believe that the removal of the gall bladder results later, in a majority of cases, in the distension of the common duct. They have had five cases of reformation of stones in the common duct, and three of them after the removal of the gall bladder. In all of the series of cases, the speaker only recalls two in which, after the primary operation of removing gallstones from the gall bladder, stones reformed in that viscus.

DR. C. H. WALLACE, St. Joseph, Mo., reported the case of a woman on whom he operated some two years ago for the removal of stones in the gall bladder. The gall bladder itself was found in a fairly good condition; the mucosa was not diseased, not very much enlarged, and the walls not much thickened. A number of stones were removed, and drainage established. Some two or five weeks ago this woman began to have attacks again. In the third or second attack she passed three or four small gallstones. This is a case in which the question arose as to whether in doing a second operation the gall bladder should be removed or drainage again tried. He thinks surgeons get the impression from those who do a large amount of gall-bladder surgery that if in a given case there is a healthy gall bladder with stones in it, where the mucous membrane is not diseased, if the stones are removed and the gall bladder drained, the patient can be assured that he or she, as the case may be, will get well. Occasionally, however, such pa-

tients return, and the guarantee of such a prognosis can not be given now with as much assurance as in former years.

DR. J. E. SUMMERS, Omaha, Neb., seven or eight years ago reported a case in which there was a tight stricture at the lower end of the common duct, and also of the cystic duct, the common duct acting as a reservoir. The liver was very much hypertrophied, as was also the spleen. The technic employed was to open the common duct and to make an anastomosis between this and the duodenum. The patient recovered.

DR. JAMES E. MOORE, Minneapolis, referred to two cases with ordinary gallstone symptoms. In one the stones were removed and the gall bladder drained. The symptoms recurred and gallstones were found in the gall bladder; the gall bladder was diseased and cholecystectomy was performed. The interesting feature about these two cases is that these women are suffering again with gallstone colic. What should be done for them? The only hope is that there is a stone in the common duct that may be reached.

DR. JOHN C. MORFIT, St. Louis, reported two cases of bowel obstruction due to gallstones. In one case the bowel was obstructed at about 18 inches above the ileocecal valve by a stone an inch and a quarter in diameter and an inch and a half long, which evidently came from the gall bladder. The woman, aged 80, made a very satisfactory immediate operative recovery. However, pneumonia developed on the eleventh day, and she died on the fifteenth day after the operation. A postmortem examination was not made, but the question arose as to the pathologic anatomy in the region of the gall bladder. How did this stone get into the intestine? Did it come through the common duct or did an inflammatory anastomosis occur between the gall bladder and some portion of the alimentary canal? He believes that there was, as a result of pre-existing inflammation, an ulceration or anastomosis between the gall bladder and duodenum, or possibly some portion of the small intestine. In the second case he found a stone in practically the same location at once, the stone being of the same size and consistency. The intestine was opened by a linear incision, the stone liberated, the incision closed, and the patient made an uneventful recovery.

Surgical Treatment of Hallux Valgus, with Bunion.

DR. CHARLES H. MAYO, Rochester, Minn., recommends for this condition a curved incision, base down, over the metatarsophalangeal joint. The bursa of the bunion is preserved, and left attached to the base of the first phalanx. The head of the metatarsal bone with the greater part of the bunion is removed. The bursa is turned into the joint in front of the cut end of the bone. Thus is utilized a ready formed bursa to prevent joint fixation, a result which is obtained in other joints with difficulty by turning fatty tissue into a joint to develop such bursa. The general function of the joint is nearly perfect, and continues to be so after many years.

Removal of Whole or Part of Humerus.

DR. E. M. SALA, Rock Island, Ill., said the removal of the whole or a part of the humerus is a comparatively safe operation, and one which should be carefully thought of in all cases where amputations were formerly the first aid to the injured in serious disturbances of the humerus. He thinks too many arms have been sacrificed in the past that might have been saved had the surgeon cared to try an extirpation of only the diseased portion of bone. That it is possible for a whole or a part of the humerus to be extirpated, and the patient given a useful hand and forearm, is beyond doubt. One-third of the upper end of the humerus may be removed, and the patient appear as though nothing had ever happened to the upper extremity, except shortening on that side. The whole humerus may be removed without serious disturbance to the hand and wrist, especially if care is exercised in saving the musculospiral nerve in its separation from the bone. Dr. Sala reported two cases, operated on some thirteen years ago, in which the results of conservative surgery are remarkable.

DISCUSSION.

DR. ROLAND HILL, St. Louis, referred to a case in which the upper part of the humerus was involved, and which was removed. This man had been taken ill in 1892 with a septic condition involving the upper part of the humerus and also the glenoid part of the scapula. In the winter of 1905 Dr. Morfit opened the joint and removed some dead bone from the upper part of the humerus and also from the scapula. The patient returned home at the end of five weeks in a much better condition, but in the summer he began to be septic again. He returned in July, at which time there was a constant discharge of pus. He opened up the parts freely, removed the head of the bone, cleaned out the cavity thoroughly and packed it. The patient improved very much, went home, but the point did not heal up. There was a constant discharge, and in March, 1906, the patient came back with the idea of having the arm removed. Dr. Hill made one more effort to save it, opened it up, curetted the diseased tissue, and found there was some necrosis at the head of the bone extending down to the medullary cavity, which was removed. He thoroughly dried it and sterilized the parts with carbolic acid and alcohol and then filled the cavity with Moorhof's bone mass. The arm was not dressed again for a week. In about six weeks thereafter healing had taken place. The arm was kept in a sling for four months, at the end of which time patient was able to use it, and has been using it ever since.

DR. W. D. HAINES, Cincinnati, mentioned a case in which he removed the humerus almost down to within two inches of the condyles. No attempt was made to save the periosteum. The patient to-day has a useful arm. He endorses this method with reference to primary amputation, stating that amputation, if really necessary, can be done later.

(To be continued.)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twentieth Annual Session, held at New Orleans, Dec. 17-19, 1907.

(Concluded from page 233.)

Treatment of Fibroids of Uterus Complicated by Pregnancy.

DR. LEWIS S. MCMURTRY, Louisville, stated that the association of pregnancy with uterine fibromyomata adds very materially to the dangers of this condition, and, while the clinical fact that a considerable proportion of the cases come through in safety is indisputable, the mortality of the entire number of cases left to Nature is high. While indiscriminate operation in uterine fibromyomata associated with pregnancy is not to be advised, the mortality of this condition when unaided is so great as to justify an extension of the field of operative treatment, both myomectomy and hysteromyomectomy, and every case should receive individual consideration so that a judicious selection of cases for operation may be observed. The author reported six cases in which operation was successful.

DISCUSSION.

DR. GEO. H. NOBLE, Atlanta, Ga., said that where the pelvis is impacted completely, where it is impossible to make a digital examination, and the upper part of the uterus is smooth, free from the tumor, the surgeon may do either a Cesarean section or a myomectomy. Since Cesarean section is a simple operation, it would be desirable in the interest of the mother and of the fetus. Myomectomy can be carried much further in well-selected cases.

DR. H. J. BOLDT, New York, reported the case of a woman three months pregnant. She had a fibromyoma in the lower anterior segment of the uterus. He advised non-interference, but stated that if any serious symptoms were encountered it might be necessary later to do a Cesarean section in case she could not be delivered naturally. Myomectomy was decided on and done to prevent an abortion. The woman made a perfect recovery. She is now eight months pregnant.

DR. HENRY D. FRY, Washington, said that one must recognize the increased danger in these cases from postpartum hemorrhage. The retraction of the uterus is not sufficient at the site of the placental attachment, and postpartum hemorrhage is likely to occur. Again, if the woman passes through labor satisfactorily and safely, there may be infection or necrosis of the fibroids. He has had that occur twice. Supra-

vaginal hysterectomy was done. The woman got well, but in cutting down on the tumor it was found to be disintegrated and necrotic. As to the time of operation for these fibroid tumors, he thinks surgeons ought to tide the cases along until the child reaches the period of viability, get as near the full term of gestation as possible, and then do a Cesarean section and supravaginal amputation of the uterus.

DR. ERNEST S. LEWIS, New Orleans, mentioned the case of a woman, five months pregnant, who had a fibroid attached to the body of the uterus and filling about one-half of the pelvis. It was not suspected until it caused pressure symptoms and pain. The cervix was pressed against the symphysis pubis. The abdomen was opened, the tumor enucleated from the back portion of the uterus, the abdomen closed, the patient made an uneventful recovery, went to full term, and was delivered with forceps.

DR. J. WESLEY BOVÉE, Washington, thinks that there are a great many such women who will go to full term and be delivered naturally, so that he thinks we can not lay down any rule that will apply to every case. Each case is to be considered individually. If any operation is to be done, it is well to follow the plan Dr. Fry mentioned. He is loth, however, to do a myomectomy where the growth is intimately connected with the body of the uterus, as he feels it would be apt to induce abortion. The case of Dr. Boldt impressed him as being unique, from the fact that operation was done to prevent abortion, and abortion did not occur, yet it was threatened before operation was done. As a rule, he would expect the opposite to be the case, and he doubted whether surgeons can follow Dr. Boldt's plan as a routine measure. In a number of cases he has done myomectomy without interfering with the pregnancy.

DR. GEORGE BEN JOHNSTON, Richmond, believes that when fibroids can be removed early in pregnancy, this should be done, but unfortunately many of the patients do not reach the surgeon until a stage of pregnancy has been reached when this can not be done safely. When a pregnancy is known to exist and is complicated by fibroids, such a patient should be watched closely, so that prompt operation may be performed, if necessary, and it is not uncommon for such a pregnancy to go on to the period when the child is viable. He has had experience in fifteen cases. He has not had a fatality among the mothers, but has been able to save only one child.

Treatment of Dislocation of Shoulder Joint Complicated with Fracture of Humerus.

DR. J. M. MASON, Birmingham, Ala., reported the case of a man who sustained a subcoracoid dislocation of both shoulders with fracture of the surgical neck of the right humerus. The left shoulder was reduced by the Kocher method, and the right was treated by arthrotomy and reduction six hours after the receipt of the injury. The fracture was wired and primary union was secured. A perfect result was obtained, and the patient has neither atrophy, pain, nor weakness in the arm, and there is no restriction of motion in any direction. A comparison of the result in the shoulder subjected to operation with the one where simple reduction of the uncomplicated dislocation was practiced shows no difference.

Fracture of Femur in Forcible Delivery.

DR. CHARLES R. ROBINS, Richmond, is convinced that such fractures are more common than the scant mention in the literature would indicate, and that successful treatment offers serious difficulties. In the treatment of such a fracture it is absolutely necessary to adopt some method that will permit handling of the child for nursing without disturbing the limb, that will permit changing of napkins, that will not become soiled, and that will not excoriate the delicate skin. These indications can not be met by any of the methods in vogue for treatment in older persons. He described a splint which he designed for this purpose.

Results of Hodgen Splint Treatment of Fractures of Thigh as Shown by the X-Rays.

DR. GEORGE S. BROWN, Birmingham, demonstrated the changes he has made in the original splint of Hodgen. First, he uses one piece of cloth as a hammock to take the place of the underlapping strips of roller bandage, which are troublesome about rolling up in strings and otherwise getting out of order. Second, he has placed small tent blocks on the supporting cords by means of which the level and hang of the limb in the splint can be adjusted in a most satisfactory manner. Third, he has placed two wire loops at the distal corners of the wire frame, through which are passed the traction strips of muslin which are pinned to the traction adhesive strips at the malleoli; these, being passed through these loops, are tied together across the sole of the foot, thus holding the limb firmly in the frame and doing away with the foot block which was formerly used, as in the Buck's. The loops of the small suspension cords are hung on the hook of a spring scales, which, in turn, is hung to the sash cord that goes over the pulley wheel in the ceiling.

The writer claims that, while the limb is swung up from the bed and the suspension cord is at an angle, the pull is bound to be constant, and that this splint is the only apparatus so far devised that will give a constant pull. He asserted that the principle that should be followed in the treatment of fractures should be that of gradual reduction by a moderate, steady pull constantly maintained, under which the muscles would entirely give up their resistance. Reduction under ether is unnecessary and useless.

The essayist showed a number of skiagraphs taken of patients, most of whom had been treated some years before the discovery of the *x*-ray. In all but two of the pictures the results were excellent, and these, he explained, had not had the advantage of proper treatment. Two pictures of fractures through the great trochanters showed perfect union, and the same could be said of several of the shaft.

Value of Intestinal Exclusion as a Surgical Procedure.

DR. JOHN YOUNG BROWN, St. Louis, reported 3 cases in which intestinal exclusion of the afferent and efferent bowel was made, followed by end-to-end anastomosis. The first case was one of strangulated, umbilical hernia in which the cecum, appendix, ascending and transverse colon were found gangrenous in the sac. At the primary operation an artificial anus was made at the umbilical ring. Ten weeks after this operation the abdomen was opened through a median incision and bilateral exclusion of the ileum and descending colon was done, followed by direct anastomosis of ileum to sigmoid, anastomosis being made with the Murphy button. The patient made an excellent recovery, and the prolapsed bowel, which remained after intestinal continuity had been restored, was removed later under cocain anesthesia by clamp and cautery.

The second case was one in which an artificial anus was made at the hernial site for a gangrenous, inguinal hernia of the right side. The abdomen was opened through the right rectus, the afferent and efferent loop of ileum excluded, and end-to-end anastomosis made with a button. The result was exceedingly satisfactory.

The third case was one in which typhlotomy was done through a gridiron incision, and at the same time the entire large bowel was excluded, except the cecum. The turning of the fecal current resulted in healing of the old sinuses. The intestinal continuity was later restored by an exclusion of cecum, and a lateral anastomosis of the ileum to the ascending colon.

Hematuria in Pregnancy.

DR. EDWARD A. BALLOCH, Washington, D. C., reported the case of a woman of 31, a septipara, with a history of almost continuous pregnancies. Blood appeared in the urine during the fifth pregnancy, the hematuria ceasing when the child was born. It skipped the sixth pregnancy, but appeared during the seventh. It did not cease with the birth of this child in March, 1906, but persisted until she came under observation in October, 1906. She was anemic from the continuous loss of blood, which cystoscopy showed to be from the left kidney. All medical means had been tried without avail. Nephrectomy was advised and accepted, followed by good recovery. After her return home, after operation, she immediately became pregnant. Hematuria was present, but disappeared with the birth of the child. The pathologic changes in the kidney were those of glomerular nephritis, with interstitial changes. Ac-

cepting the hematuria as a symptom of chronic nephritis, the cause of the latter was discussed and considered to be mainly an autotoxemia from perverted metabolism, of maternal or fetal origin, or both. As this is the second instance in the writer's experience where an uneventful pregnancy has followed a nephrectomy, he does not consider that the loss of one kidney has much effect on subsequent pregnancy.

Sensitive Short Uterosacral Ligament.

DR. EDWARD J. ILL, Newark, N. J., drew attention to the sensitive short uterosacral ligament as a pathologic entity. The condition should not be confounded with intraperitoneal adhesions, nor with shortening of the base of the broad ligament, due to scars resulting from puerperal injuries. Outside of the acute pelvic exudate, the writer knows of no condition so painful on pressure as the short and sensitive uterosacral ligament. During the last twelve years 5 per cent. of all his operative gynecologic cases suffered with a short and sensitive uterosacral ligament. When but one ligament is diseased, it occurred in 73 per cent. on the left side. The disease may be congenital or acquired either in childhood or during active sexual life. Because of the short ligament a fixation of the uterus results. The circulation of the organ becomes impaired. Catarrhal and metritic changes result in menstrual disturbances. Sterility is a frequent symptom, and abortion sometimes results from a very short ligament. The treatment suggested by the writer consists of a most thorough stretching of the tense and sensitive uterosacral ligaments, while the patient is under profound anesthesia, until the uterus becomes freely movable. A free dilatation of the uterus with graduated steel sounds, curettage, etc., should be added.

Cyst of the Pancreas.

DR. RUFUS B. HALL, Cincinnati, said that true cysts of the pancreas are retroperitoneal tumors, while pseudocysts are intraperitoneal accumulations of fluid. The tail of the pancreas is the favorite anatomical location for the development of these cysts. The diagnosis of pancreatic cysts should be based on the character of the contents of the tumor rather than on the supposed demonstration of anatomic connection. The author reported a case occurring in a woman, 42 years of age, on whom he operated successfully.

Transperitoneal Ureterotomy for Ureteral Calculus.

DR. GEFRY R. HOLDEN, Jacksonville, Fla., reported one case and pointed out the reasons why an abdominal extraperitoneal operation was impossible on account of the thick abdominal walls. He does not believe that transperitoneal ureterotomy for ureteral calculus is often the operation of election. He does believe, however, that it is the best operation when the stone is impacted at or just above the uterine artery, provided one is reasonably assured that infection is either mild or else absent altogether.

Inconsistencies of Gauze Pack.

DR. HUBERT A. ROYSTER, Raleigh, N. C., said that a strip of gauze is simply a means of applying the law of capillary attraction. Rubber tube and tissue have been substituted, because the gauze so frequently fails to drain, acting as a successful stopper to the outlet. When intended for a drain, gauze should be inserted after the manner of a lamp-wick; when used for hemorrhage, it should be packed in like wadding with a ramrod. There is a field for gauze in packing sinuses, fistulæ and granulating wounds, so that healing may take place slowly from the bottom. The use of gauze to wall off septic matter in abdominal operations is fraught with danger. It necessitates a long incision, undue handling of the viscera, and almost always uninfected regions are in contact with pus-soaked gauze. Exposure of the peritoneum to gauze soaked with pus is just as dangerous as the presence of pus itself among the intestines.

Suppurative Phlegmonous Gastritis.

DR. J. WESLEY BOVÉE, Washington, reported a case of circumscribed suppurative phlegmonous gastritis in which he resorted to gastrostomy. With the exception of infection of the abdominal incision, which required resuturing, she made an uninterrupted recovery.

Harmful Involution of the Appendix.

DR. ROBERT T. MORRIS, New York, said that normal involution of the appendix is often a harmful process and produces many of the symptoms ascribed to other organs. Differential diagnosis is easily made by two features: First, a persistent or frequently recurring sense of discomfort in the appendix region; second, a hypersensitiveness of the right lumbar ganglia. To find the right lumbar ganglia, draw a line from the navel to the right anterior superior spine of the ilium. An inch and a half from the navel on this line will be found the diagnostic point on deep pressure. McBurney's point is six or eight inches away, at the other end of the line. McBurney's point has reference to acute inflammatory processes in the appendix itself. The point described by Dr. Morris has reference to reflex disturbances caused by the appendix. If the right lumbar ganglia alone are tender on pressure, the appendix alone is responsible for disturbances of the stomach and bowel that are ascribed to other causes. If the disturbance proceeds from some organ in the pelvis, both right and left lumbar ganglia are tender. If the disturbance proceeds from the bile tract, or from eye-strain, or some point above the navel, neither the right nor left lumbar ganglia are tender.

Surgery of the Heart and Pericardium.

DR. RUDOLPH MATAS, New Orleans, said that it may safely be concluded that heart wounds far from being invariably fatal give three chances in four for survival long enough to permit surgical intervention; one chance in ten to heal spontaneously, and one in two to be cured by surgery. Further progress in cardiac surgery, he said, can only be accomplished by methods which will diminish three great factors in the mortality—namely, shock, hemorrhage, and infection.

Other Papers Read.

The following papers were likewise read: "Some Recent Factors in the Elucidation of Chronic Joint Disease," by Dr. C. E. Caldwell, Cincinnati, Ohio; "(a) Tracheotomy for Foreign Bodies, 53 Successful Cases; (b) Fracture of the Clavicle," by Dr. Willis F. Westmoreland, Atlanta; "Some Remote Symptoms and Effects of Cholelithiasis," by Dr. A. M. Cartledge, Louisville; "Hare-lip and Cleft Palate," by Dr. Alex. Hugh Ferguson, Chicago; "Leverage in Spinal Disease," by Dr. J. D. Bloom, New Orleans; "Suture of the Urethral and Vesical Sphincters for the Cure of Incontinence of Urine, with a Report of a Case," by Dr. Hugh H. Young, Baltimore; "Operation for Relief of Rectovaginal Fistula," by Dr. George H. Noble, Atlanta.

Medicolegal

Points from Alleged Malpractice Case as to Admissibility of Evidence, Expert Testimony, Results as Test, and Presumptions.

The Supreme Court of Vermont says that the plaintiff in the alleged malpractice case of Sheldon vs. Wright, while in the employ of a company, suffered a fracture of the tibia of his right leg. The fracture was oblique as distinguished from transverse. The plaintiff's family physician was forthwith called, set the fractured bone, and attended to the leg for three or four days. Then the defendant was called by the plaintiff, and took the case, because the company, whose contract duty it was to furnish the medical and surgical services required, designated him to perform them. Subject to objection and exception, the plaintiff was allowed to take the testimony of the defendant to the effect that he drew a yearly salary from the company, and that his compensation did not depend on the number of cases he treated for the company, except that in some cases the company added to his salary. In this, the court holds there was no error. It says that the plaintiff had the right to call the defendant to the witness stand, and, with the privileges of cross-examination, to inquire into his relations to this case, and, since his relations thereto involved his relations to the company, to inquire into those so far as the above recital showed that they were inquired into.

Subject to objection and exception, the plaintiff testified

that, some time after his case had been discharged by the defendant, another physician put a plaster cast on the leg, that this was worn about two weeks, and that it assisted the plaintiff in getting about. This testimony was properly heard. The history of the leg from the time of the fracture to the trial, the treatment it had received and the results thereof, whether beneficial or injurious, were calculated to throw light both on the question of liability and on the question of damages.

Also, subject to objection and exception, the plaintiff testified that he was not able to run and travel on the leg as formerly. The objection was that the condition of the leg at the time of the trial, its condition as to strength, and how it compared with what it was before it was broken had no tendency to show any negligence on the part of the defendant. But, on any theory as to what would and what would not tend to show negligence, it woulid have been impracticable, undesirable and improper, the court says, to keep from the jury the condition of the leg at the time of the trial, its condition before the fracture, and the nature of the fracture, to say no more. These things were essential to make intelligible the expert evidence on both sides.

An *x*-ray picture of the plaintiff's leg was in evidence without objection. This was shown to one of the defendant's medical experts, and, under objection and exception, he was allowed, in substance, to state that the bearing of the two fragments of the broken bone as shown by the picture was not exactly in line. The defendant's counsel claimed that this testimony was erroneously received, because the jury could tell about the matter as well as any expert. But the physician was using the picture for the purpose of demonstration, and, the court says, could rightly point out things which his practiced eye discovered, so far as they were of significance. It was as though the expert had used the leg itself for the purpose of explaining its condition to the jury. The picture was referred to, and an examination of it was quite convincing of the propriety of medical testimony as to what it really showed.

The defendant requested that the jury be instructed that "the negligence or lack of skill of the defendant is not to be tested by the results of the treatment." The court says that the proposition contained in this request is a sound one, was applicable here, as, in general, it is in malpractice cases. But it was sufficient that the jury was instructed to the effect that there was no liability on the part of the defendant, unless there was a failure on his part to have and exercise the requisite degree of skill, and unless damage to the plaintiff resulted from such failure; the statement of the case and of the issues, what was said on the question of liability and nonliability, and the tenor of the entire charge being such that the jury must have understood that the results did not test or determine the question of negligence or want of skill on the part of the defendant. It says that, since apparently malpractice cases are sometimes brought simply because of dissatisfaction with the results of a surgical operation, and since evidence of the results is usually connected with other evidence in such a way that the results can be held up before the jury in both the opening and closing argument for the plaintiff, and since the members of the medical profession are often called on to act when disease or accident makes heavy the odds against the accomplishment of the desired result, the jury should always be made to understand in malpractice cases that results do not determine whether or not a physician or surgeon has performed his duty.

Again, the jury were instructed: "The testimony of professional or scientific witnesses on the subject of their special knowledge forms a class by itself; but it is governed by the ordinary rules. It is true that the opinion of one who has given special study to a particular subject and had large experience in connection with it, in whom you feel that you have confidence, is entitled to very careful consideration, and may be of controlling weight. But you are not bound to accept the statements or conclusions of expert witnesses. Their testimony is simply one kind of evidence, to be considered in connection with all other evidence bearing on the same point. In considering the testimony of an expert witness you take all his testimony together and see what the fair result of it is. You exercise your judgment in considering and weighing the testimony of an expert the same as you would in considering any other kind of evidence." Especial complaint was made of the sentence: "But you are not bound to accept the statements or conclusions of expert witnesses." But this sentence in its connection, the court says, was in no way misleading. The conclusions of the experts were conflicting. If some were right, others were necessarily wrong. The jury were left to determine the matter on the whole evidence, and this course was entirely right, as, in any view, the strictly expert evidence was without value, except as it was based on facts which the jury might find from other evidence.

The ordinary witness testifies as to facts about which the jurymen have or should have knowledge of their own; but, nevertheless, they must apply their own good judgment to the testimony of such witnesses in determining what facts are proved. The expert in a case like this testifies to facts of a different class, or to the interpretation of facts, matters, for the most part, about which the jury are not expected to have knowledge of their own, but nevertheless they must apply their sound judgment to the comparison, sifting and weighing of such testimony and to a consideration of the sources from which it comes.

In the charge here there was no encouragement of the idea, somewhere suggested, that the introduction of expert testimony constitutes chiefly an agreeable diversion, or a restful surcease of practical combat, during which all concerned in the case may be refreshed and entertained with the niceties of abstract theories and distinctions. The charge presents the sound and sober view that the jury are to hear and weigh the expert testimony, however conflicting it may be, with the same feeling of duty and responsibility as rests on them in hearing and considering the other testimony, to the end that they may get from it all the aid it can give them in coming to a right decision of the very case in hand.

It is believed to be the law that there can not be a recovery for malpractice in the case of an operation like this under consideration without medical expert testimony to show lack of the requisite skill and care on the part of the defendant. But there may be such testimony, and yet the witness giving it may display such a lack of candor, such feeling, such advocacy, he may testify in such a way as to facts which are matters of common knowledge or which are established by the testimony of non-expert witnesses, that the jury feel that they can not in good conscience accept his strictly expert testimony. Where in a case like this there is no expert evidence which the jury can accept tending to show malpractice, the jury must give a verdict for the defendant.

The defendant requested the judge to charge as follows: "The law presumes that the defendant had and exercised the requisite degree of care and skill, and this presumption is in the nature of evidence in behalf of the defendant and should be thrown into the scales and weighed with the other evidence in the case making in favor of the defendant." The judge did not comply with this request, and the defendant excepted. The defendant further excepted, in substance, to a failure to instruct the jury that the law presumed that the defendant did his duty in the premises, and to a failure to charge that there was a legal presumption to that effect, which was in the nature of evidence, and which was to be weighed by the jury in connection with the other evidence in the case. The court, however, does not think that there was any legal presumption here. There was rather an absence of such presumption. Negligence was not to be presumed, and the burden of showing negligerce was on the plaintiff. With regard to this burden, the judge charged fully and correctly. The defendant was not entitled to have the request last mentioned complied with, and the failure of the judge to charge in the respects pointed out was simply a failure to wander into error.

It is true that the decisions of some courts have more or less clearly indicated a legal presumption against negligence in malpractice cases. Such a case is State to Use of Janny vs. Housekeeper, 70 Md., 162, quoted from by the defendant. But the outcome of what is said in the opinion in that case is that negligence can not be presumed, but must be affirmatively proved. In a recent malpractice case determined in

Minnesota, and not cited by the defendant, the court of the state says: "The ubiquitous protectorate which jurisprudence extends to all material interests and to every science and to every art takes note of our common fate, with possibilities of failure in the professional treatment of disease, and accords the medical practitioner in every case the presumption that he has done his full duty." Martin vs. Courtney, 87 Minn., 197. But this somewhat vague declaration with regard to presumptions simply leads up to the conclusion that a plaintiff who alleges negligence must prove it if he would win his case.

In view of the doctrine in Vermont, that a true legal presumption is in the nature of evidence and is to be weighed as such, unguarded and inexact expressions about presumptions should here be scrupulously avoided. The defendant argued that there must be in the state the legal presumption which he asserted in favor of physicians and surgeons, since, if a physician brings what is called an action of assumpsit to recover for professional services, he is not called on in his opening to negative lack of skill and care in his treatment; but he is not so called on because of the application of a rule of pleading and practice which makes lack of skill and care a matter of defense.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

January 9.

1 Practical Applications of Opsonic Therapy. (To be continued). T. C. Beebe, Jr., Boston.
2 *Mexican Mining Practice from Tuberculosis Point of View. I. S. Kahn, Velardena, Durango, Mexico.
3 *Chronic Dyspepsia. J. B. Deaver, Philadelphia.
4 *Method of Obtaining Extension for Fractures in Upper Two-thirds of Humerus. H. A. Lothrop, Boston.

2. Mexican Mining Practice.—Kahn gives an interesting description of the general conditions, life, practice, financial returns, amusements, etc., offered by a Mexican mining camp. The article is written with a view to offering practical assistance to physicians afflicted with tuberculosis, who are unable to give up their work and wish to practice it under conditions favorable for cure.

3. Chronic Dyspepsia.—The cause of chronic dyspepsia, Deaver states, is chronic disease in the gastrointestinal canal or associated glands, and also factors that disturb the equipoise of the abdominal sympathetics, such as ptosis of any organ or organs within the abdomen. The appendix plays the most important part of any abdominal organ in both acute and chronic indigestion. Deaver discusses gastric and duodenal ulcer, cholelithiasis and dilatation of the stomach from pyloric obstruction, and outlines his treatment for chronic dyspepsia with reference to the details of thorough abdominal examination, examination of the stools, use of test meals, the chemical and microscopical examination, etc. A gastric or gastrointestinal neurosis must be excluded before opening the abdomen. If necessary the patient must be referred to a neurologist. There is too great a tendency not to realize our limitations.

4. Fractures of Upper Humerus.—Lothrop reports an ingenious method of his own devising for obtaining extension in fractures of the upper two-thirds of the humerus. It consists of an internal angular tin splint, the short arm of the splint being applied to the forearm, the longer vertical arm reaching to the level of the axilla. A stiff felt shoulder cap of suitable size and shape is then selected and placed on the outer side of the shoulder, so that its front portion overlaps the vertical arm of the internal angular splint. It is then fixed by means of strapping to that splint in such a position that while the bottom of the shoulder cap has its lower corners in contact with the angle of the splint, its upper, rounded extremity is two inches above the convexity of the shoulder, thus leaving a considerable space. A pad is placed in either axilla. By proper bandaging it will be seen that downward pressure on the top of the shoulder cap must produce extension proportionate to the force employed, while pressure directed backward will carry the upper end of the lower fragment in the same direction. The essential points, then, are a large free space above the shoulder and under the upper end of the shoulder cap, and the application of the bandage so as to exert pressure on the top of the cap downward and backward. All turns of the bandage should pass from before backward around the affected side and from behind under the opposite axilla.

Medical Record, New York.

January 11.

5 *The Plague. A. H. Doty, New York.
6 *Renal Complications and Sequelæ of Influenza. H. Stern, New York.
7 *Influenza of Nose, Throat and Larynx. W. S. Bryant, New York.
8 Duchenne of Boulogne. A Biography and an Appreciation. J. Collins, New York.
9 *Relation of Accidents to Functional Nervous Diseases and Psychoses; Medicolegal Considerations. A. Gordon, Philadelphia.
10 *Fetid Breath—Bromopnea. W. J. Lederer, New York.
11 Forms of Tubercle Bacilli Which Can Not Be Colored by Ziehl-Neelsen Stain. C. A. Treuholtz, Fort Bayard, N. M.

5. Plague.—Doty considers the history of plague and other epidemics, and argues therefrom that when modern sanitary regulations are carefully enforced, particularly in communities where people aid rather than obstruct the health officers, outbreaks of infectious disease can surely be brought under control, and that the ravages which they have caused in the past need never occur again. He guards against belittling the dangers, but points out that the conditions which are responsible for the havoc wrought by plague in India could not occur in any part of the world where modern sanitary regulations can be enforced.

6 Renal Complications of Influenza.—Stern insists that renal disease as a sequence of influenzal poisoning is underestimated. He distinguishes three forms of renal complications of influenza: (1) Cases with acute symptoms of renal involvement; (2) cases in which occurs an aggravation of pre-existing renal disease; (3) postinfluenzal nephritis. He discusses these forms in detail, and states with regard to acute nephritis that it is comparatively infrequent, which fact must be ascribed to the slight virulence of the influenza poison to the kidneys. Postinfluenzal nephritis is less of a complication than sequel. Stern is of the opinion that the majority of chronic interstitial nephritides not due to constitutional causes are the consequence of an acute infectious disease. In all cases of a long protracted convalescence from influenza, or of bodily decline after this infection, the state of renal efficiency should be ascertained by the phloridzin test. He shows that of fourteen sets of kidneys tested in this way only three pairs functionated properly.

7. Oronasal Influenza.—Bryant's thesis is that the influenza bacillus enters through the mucous membrane of the pharynx. The diagnosis is readily made in the great majority of cases as soon as symptoms appear. It is amenable to appropriate treatment. The complications of the upper air tract can be avoided by prophylactic care of the nose or serious results can be prevented by early operation after infection has taken place.

9. Accidents and Psychoses.—Gordon says that in cases of railway or other injuries caused by neglect of those who have in charge the management of transportation cars, it is no more than just that the injured person should be compensated for disability. On the other hand, simulation or exaggeration of incapacity should be condemned. The physician is indispensable to the law. In the name of justice he invariably must be reserved in his statements. His opinion must be formed after a thorough study of each individual case. He must not forget that, while some severe traumatisms produce mild symptoms, some insignificant ones cause marked disturbances of the nervous system. The degree of the disability and the prognosis of the affection vary in different cases. The recognition of the affection, the recognition of the influence of the accident on its manifestations, finally the discrimination of a genuine malady from a simulated one can be acquired only when the physician is properly prepared. In view of the practical importance of the subject, a continuous study of it is indicated.

10. Fetid Breath.—Lederer discusses fully the nature, origin and causes of the various forms of fetid breath, besides those

due to conditions of the respiratory and gastrointestinal tract. Nervous disturbances, emotion, the menstrual period and sexual intercourse, all affect the breath in certain cases. He emphasizes the fact that systemic disturbances will not always produce general systemic symptoms, and that bromopnea, so frequently treated unsuccessfully as a condition *per se* and often not treated at all, is frequently the signal of masked systemic disturbances.

New York Medical Journal.

January 11.

12 *The Voice as an Index to Diseases of Throat, Nose and Ear. G. H. Makuen, Philadelphia.
13 Advantages of Sanatorium Régime in Tuberculosis, Especially in the Treatment of Extrapulmonary Lesions. F. M. Pottenger, Monrovia, Cal.
14 *Acute Pulmonary Edema as a Complication of Epileptic Seizures. W. T. Shanahan, Sonyea, N. Y.
15 *The First Week of Infant Life. D. H. Sherman, Buffalo.
16 Abortive Treatment of Gonorrhea in the Female. F. Bierhoff, New York.
17 *Cerebral Contusion. C. White, Washington, D. C.
18 Hospital Dietetics. D. Roberts, Brooklyn.
19 Causes of Appendicitis. A. W. Armstrong, Canandaigua, N. Y.
20 Inspection and Chemical Examination of Baltimore Milk Supply. W. E. Hoffman, Jr., Baltimore.
21 Bier Clinic at Berlin. M. H. Brown, New York.

12. **The Voice.**—Makuen discusses the character of the voice as an index to the physical, moral and cultural qualities of its owner. He points to the weak and almost inaudible voice of the very sick person, the so-called ministerial voice of the minister, the sympathetic voice of the physician, and the colder and more judicial tones of the lawyer, as well as to the generally recognized cultured voice of highly educated and refined people. Defects of voice, however, dependent on physical causes, may be overcome by training, as when one is surprised to find enlarged tonsils or relaxed palates or elongated uvulas in the throat of famous singers. He goes into detail concerning the hoarse, the throaty, the tremulous, the muffled, the whispered, the falsetto and the nasal voice. The hoarse voice is always pathognomonic, either of intralaryngeal disease or of some disease of the central nervous system having an intralaryngeal expression. Acute laryngitis, incipient tuberculosis, intralaryngeal tumors and ulcers are instances. The tremulous voice is found in those debilitated by overwork or extraordinary vocal effort. It often becomes a nervous habit, a veritable fear neurosis. The whispered voice is found in hysterical aphonia and in acute laryngitis with mechanical obstruction of the cords. It must be remembered, however, that the hysterical element may be not the cause but a subsequent development. The voice of the deaf is an unmodulated voice. The muffled voice indicates faucial or nasal obstruction. The falsetto voice rarely indicates a special lesion. It is due to erroneous conception of the true tones. The nasal voice is due generally to inadequacy of the velum palati.

14.—Abstracted in THE JOURNAL, Nov. 16, 1907, page 1703.

15. **Infant Life.**—Sherman calls attention to some neglected precautions that can be taken on behalf of the infant in its first week of life, and emphasizes the necessity of asepsis. He reviews the statistics of infant mortality as indicating the following points requiring careful attention: The first is the body temperature. The temperature in the rectum should be kept above 98; the birth temperature is about 99.5, and in one hour is apt to be 96 or 97, and not for a week can the child easily maintain it at 98. The amount of food ingested is important. The scales are of value in this connection. Pain due to the giving of too little water, to which a small amount of alkali should be added, is another factor. Uric-acid infarction of the kidney of the new-born is not infrequent. The rougher methods of performing artificial respiration when necessary form another cause of physical depression. Sherman considers the various sources of infection of the new-born infant in considerable detail and their manifestations, commonly thought due to other diseases—gastrointestinal disturbances, respiratory troubles, skin diseases and nervous conditions—all of which may be due directly or indirectly to infection. Icterus and melena of the newborn are considered in detail.

17. **Cerebral Contusion.**—White discusses the symptomatology, diagnosis, prognosis and treatment of cerebral contusion, reports two cases and states the following general conclusions: Cerebral contusions, when fatal, are due to laceration or hemorrhage. Prolonged coma is a reliable indication of increased pressure. A conscious period followed by coma indicates hemorrhage. High blood pressure is an early and reliable symptom of pressure. Trephining is indicated in plus intracranial pressure from hemorrhage or edema. Venesection is of doubtful value.

Lancet-Clinic, Cincinnati.

January 4.

22 *Treatment of Pneumonia in Children. F. H. Lamb, Cincinnati.
23 *Symptomatic Toxemia from Local Infection. B. Holmes, Chicago.
24 Preparation and Postoperative Treatment of Surgical Cases. L. G. Bowers, Dayton, Ohio.

January 11.

25 *Inoperable Sarcoma of Neck Treated Successfully with Coley's Toxins. J. C. Oliver, Cincinnati.
26 Gonorrhea and Marriage. T. M. Reade, Springfield, Ohio.
27 *A Duty to Society Only Partially Performed by the Medical Profession. B. H. Blair, Lebanon, Ohio.
28 Diagnostic Value of Cutaneous and Ocular Reactions to Tuberculin. H. Schroer, Cincinnati.

22. **Pneumonia in Children.**—Lamb discusses the treatment of bronchial pneumonia and lobar pneumonia in children, and among other points emphasizes the following: Digitalis does not act so well in children as in adults. A reliable preparation of strophanthus is safer and better than digitalis. Caffein is an excellent drug for a weak heart when cerebral congestion is not marked. Camphor as a heart stimulant is not appreciated by most physicians, but it is one of the best we have. A child of one year may take 1 dram of camphor water every two hours. Alcohol is rarely of service in bronchial pneumonia. In collapse from heart failure a hypodermic of ether may be given immediately, followed by the slower-acting but more persistent strychnin sulphate (from 1/50 to 1/30 grain for a child of one year), or by a syringeful of camphorated oil. In lobar pneumonia cold compresses are of great value in the early stages. In most children the dosage of drugs is proportionately larger than in adults, and in pneumonia they should be given to the limit of tolerance. Finally, he says, never give up in pneumonia, but stimulate to the bitter end.

23. **Symptomatic Toxemia.**—Holmes reports five cases illustrating toxemia manifesting itself in the circulatory apparatus by a mild carditis and tachycardia. He says that the source of secondary diseases of the kidneys, heart or nervous system should always be sought in a hidden toxemia. Frequently, infection of the mucous cavities of the body, cholecystitis and cholangitis originate a toxemia manifesting itself in a myocarditis, symptomatically expressed by tachycardia, dyspnea and dilatation of the heart. Cholecystostomy and prolonged biliary drainage terminate the toxemia and restore relative health. There is a toxemia in practically every case of mental aberration, requiring commitment to an institution.

25.—Abstracted in THE JOURNAL, Jan. 18, 1907, page 233.

27. **The Medical Profession and Society.**—Blair recites the various public services rendered by the medical profession to humanity, in its influence on the progress of civilization and commerce, the discovery of the cause of various infectious diseases and their consequent reduction, the saving of sight and hearing in infants, and the preservation of the public health by general sanitation, by the regulation of labor, particularly in the case of women and children, and by other economic measures. The importance of its work, however, in the exposure of quacks and quackery, and especially of the nostrum evil, is not so generally recognized as it should be, even in the profession itself, as being a work on a par with those above named. Yet such it is, for this evil involves the consumption of enormous quantities of alcohol, opium, and other deleterious preparations undermining the general health, or creating enslaving habits. It is further charged against the nostrums that their claims are mostly exaggerated, misleading and fraudulent; they foster a belief that serious illness exists or threatens when such is not the case; they discourage and postpone a correct diagnosis, on which alone a rational treatment can be founded; until a period, perhaps, when the remediable has become irremediable. By their insistence,

also, on the all importance of the drug remedy, they tend to divert public attention from those important matters of diet, hygiene and regimen to which drug treatment should really be an auxiliary; many of them are absolutely immoral in their purposes; they create false standards of professional excellence and of religion and philanthropy. It is clearly, then, the duty of the medical profession to fight these evils in every way, by teaching individually their patients and associates, by public lectures, by supporting those leaders, journals, agencies and organizations, lay or professional, engaged in suppressing fraudulent medicines and practices or immoral advertising. Finally, Blair commends the Public Health Defense League, and urges on physicians, as a step toward strengthening themselves for this work, the devoting of more time to the study of pharmacology, the Pharmacopeia and the National Formulary, together with the work of the Council on Pharmacy and Chemistry.

Journal of Medical Research, Boston.

December.

29 *Study of Gonococcus by Fixation of Complement. O. Teague and J. C. Torrey, New York.
30 *Relation of Eosinophilic Cells of Blood, Peritoneum and Tissues to Various Toxins. C. P. Howard, Montreal, Can.
31 *Elastic Tissue Proliferation. S. W. Sappington, Philadelphia.
32 Study of the Diphtheria Group of Organisms, with Special Reference to Fermentation. H. Zinsser, New York.
33 *Pathologic Histology of Rabbits After Double Nephrectomy. P. A. Lewis, Boston.
34 *Difference in Results Obtained After Inoculation of Tumors into Individual in Which Tumor Had Developed Spontaneously and into Other Individuals of Same Species. L. Loeb and S. Lepold, Philadelphia.
35 *Function of Tonicity in Human Isohemagglutination. F. P. Gay, Boston.
36 *Determination of Alexic Activity of Human Blood Serum. Id. and J. B. Ayer, Jr., Boston.
37 Alexic Activity of Blood Serum of Cadavers. F. P. Gay, Boston.

29. The Gonococcus.—Teague and Torrey found that the serum of an animal immunized to one strain of gonococcus may not cause fixation of complement when tested against an antigen obtained from another strain. This confirms the view, already advanced, from a study of the agglutinins and precipitins of the gonococcus, that this in reality is a heterogeneous family of organisms. In applying this method of fixation of complement to the differentiation of the gonococcus from other micro-organisms erroneous conclusions are consequently likely to be drawn, on account of this heterogeneity. The use of serums immune to several selected strains may prove to be a solution of this difficulty. In attempting the diagnosis of gonorrheal infections by this method of complement, fixation extracts of several different strains must be employed.

30. Relations of Eosinophiles to Toxins.—Howard concludes that there is a prompt and general diminution of the eosinophilic cell in the blood of the general circulation following subcutaneous, intraperitoneal and intraocular injection with sodium chlorid, egg albumin, typhoid toxin, *Streptococcus pyogenes* and *B. anthracis*. On intraperitoneal inoculation there is a definite and often marked decrease of the eosinophilic cell locally, while after inoculation into the anterior chamber of the eye there is no appreciable local attraction of this cell. Hence, the eosinophilic cell is a specific cell and reacts differently to these substances from the polynuclear small granular cell.

31. Elastic Tissue Proliferation.—*B. Hoffmanni*, *B. diphtheriæ*, and *B. xerosis* can be readily differentiated on the serum-water-sugar media; the first causing acid in none of the sugars used; the last two differing in that *B. diphtheriæ* ferments dextrin but not saccharose, and *B. xerosis* ferments saccharose but not dextrin. These results are different from those of other observers.

33. Pathologic Histology of Rabbits After Nephrectomy.—Complete destruction of the function of the kidneys in rabbits, either by double nephrectomy, ligation of both renal arteries, or ligation of both ureters, as a constant result, causes the development of an acute parenchymatous fatty degeneration and interstitial proliferation in the myocardium, an accumulation of fat in the endothelial cells lining the sinusoids of the liver and the accumulation of a substance, probably fat, in the blood serum. The experiments are an interesting illustration of the severity and character of the anatomic alterations which may develop in the body of an animal by its own perverted forces to the exclusion of extraneous poisons or infectious agents. So far as these experiments may be assumed to bear on the problem of the origin of the chronic myocarditis associated with nephritis arising under natural conditions in man and animals, they tend to support the view that the pathologic changes in the heart are a direct consequence of the kidney disease and independent in their origin of the vascular disease so often associated with both. The life of the animal after double nephrectomy is so short that the experiments can hardly be held to preclude the possibility that disease of the blood vessels might also be a direct although a later consequence of kidney disease.

34. This article is discussed editorially in this issue of THE JOURNAL.

35. Human Isohemagglutination.—Gay finds that there is evidence for the belief that isoagglutination of human blood may be due simply to physico-chemical variations of molecular concentration, and independently of the presence of any hypothetical new chemical complex (agglutinin).

36. Alexic Activity of Human Blood.—As fixed unit for determination of the lytic activity of human serum, 1 c.c. of beef blood corpuscles saturated with the inactivated (56 C.) serum of rabbit immunized against beef blood was employed. In cases of insanity, normal as regards physical condition, the lytic activity of the serum as determined by this method was found to correspond very closely in the majority of cases and also in several determinations made at different times on the same individual.

American Journal of Obstetrics, New York.

December

38 *Best Method of Teaching Gynecology. J. N. West, New York.
39 *How to Teach Diagnosis in Diseases of Women. J. R. Goffe, New York.
40 *Teaching Methods in Gynecology. C. Jewett, Brooklyn, N. Y.
41 *Teaching by Charts, Models and Modeling. R. L. Dickinson, Brooklyn, N. Y.
42 Two Cases of Abdominal Section for Trauma of Uterus. J. B. Sutton, London, Eng.
43 Primary Squamous-Celled Sarcoma of Body of Uterus. C. C. Norris, Philadelphia.
44 Case of Deciduoma Malignum. A. M. Vance, Louisville, Ky.
45 *Intra-abdominal Torsion of Omentum without Hernia. R. B. Skeel, Cleveland.
46 *Nymphomania as Cause of Excessive Venery. C. C. Frederick, Buffalo, N. Y.
47 Myofibroma Complicating Pregnancy; Hysterectomy. E. J. Ill, Newark, N. J.
48 *Conservative Medical Treatment of Salpingitis. Id.
49 *Consistency in Aseptic Surgical Technic. J. E. Sadler, Poughkeepsie, N. Y.
50 *Deciduoma Malignum. M. F. Porter, Fort Wayne, Ind.
51 Unusually Large Dermoid Tumor in Ovary. W. M. Humiston, Cleveland.
52 Nephrocolopexy. H. W. Longyear, Detroit.
53 Large Echinococcus Cyst of Liver; Operation and Recovery. H. E. Hayd, Buffalo, N. Y.
54 Cotarnin Phthalate in Uterine Hemorrhage. O. Maier, New York.
55 Hydramnion: Acrania with Spina Bifida. J. M. Rector, Jersey City, N. J.
56 Case of Puerperal Eclampsia. W. E. Lippold, Brooklyn, N. Y.
57 Telephonic Curette. A. C. Jacobson, Brooklyn, N. Y.

38. Teaching Gynecology.—West suggests a union of medical colleges into a medical university under the control of the state, which should assign to public hospitals according to the number of their beds a certain proportion of medical students in their fifth year, and by placing work now done by nurses, such as taking pulse and temperature, and administration of massage, hydrotherapy, in the hands of the medical students in their last year, the hospitals might diminish the number of nurses, greatly increase the number of internes, and carry out useful forms of treatment which under our present system are almost neglected. The need of postgraduate schools at present is enormous. Their proper function consists in bringing before graduates the latest procedures and refreshing their minds on the most improved methods of diagnosis and treatment.

39. Id.—Goffe emphasizes the fact that the genital organs of woman do not constitute the entire woman. At present the symptom-group of nervous exhaustion—anemia, backache, bearing down, difficult walking, ovarian pain and menstrual disorders—although often without the least gynecological significance, is usually the signal for a gynecologic diagnosis. Yet these very exacting symptoms may be wholly due to nerve

strain, or to loss of brain control over the lower nerve centers, and not to direct or reflex action from some supposed uterine disorder. Neither need they necessarily come from some existent real, tangible and visible uterine lesion. The invisible, impalpable, imponderable nervous system may be the sole delinquent. All the uterine symptoms may be the outcome of the woman's sorrows, and not of her local lesions. She may be suffering from a sore brain and not from a sore womb. In all cases the heart, the lungs and the kidneys should be examined first of all. As to the tactus eruditus, it resides not in the finger but in the brain, and is that faculty of mind which consists in making a mental picture of what the sense of touch conveys to it. By cultivation it reaches the highest perfection in the blind. In vaginal examination the first need is a fixed line of departure. When the patient is lying on her back on the table, the axis of the vagina lies parallel with the table. Passing the finger in direct extension from the forearm, which is parallel with the table, it reaches the cervix, whose direction to the axis of the vagina must be either perpendicular or parallel. If perpendicular and pointing posteriorly, the uterine position is normal and the fundus must be normally anterior. If the cervix is parallel to the vaginal axis, a pathologic condition is present, and the fundus must be either anteflexed, retroflexed or retroverted. As perfect perpendicularity or parallelism is not to be found, we must determine the approximation to either, and this is done by noting how the finger approaches the anterior lip, the os and the posterior fornix, or point of attachment of the posterior wall to the cervix, respectively. Goffe then describes in detail his method of instructing in regard to the position of the fundus and the varying conditions thereof, and the search for the ovary.

40. **Id.**—Jewett discusses the lecture, the quiz, practical training, diagnosis, operations on the cadaver, surgical clinics and casts for teaching, and describes the making of the latter with plaster, paraffin wax, molding composition, glue or gelatin and glycerin, and paper or papier mache.

41. **Id.**—Dickinson describes the methods of making and storing wall charts, and that of teaching by casts, modeling clay and glue molds. Two figures show the value, by contrast, of lines or washes of color on charts. He suggests that Clarence Webster's sketchy colored plaster casts of the every-day vulva and cervix and the common defects and injuries and of the steps of the operation for their repair, could well be reproduced for a few cents, like the medallions Italians sell, and sold to students or lent to them. The glue molds might be used in teaching suture of primary perineal injuries. The surface should be dusted with any white powder, and as the scissors make the denudation the red material shows up. The material is that used in the grotesque faces sold by street fakers; it is used by all plaster workers for matrices, the only addition being that of a little brown sugar.

45, 46, 48, 50. Abstracted in THE JOURNAL, Oct. 5, 1907, page 1213.

49. **Aseptic Technic.**—Sadlier considers that the difference in mortality statistics between equally careful, painstaking and competent surgeons lies in consistency or inconsistency of asepsis. He insists on the value of having material prepared, packed and unpacked, by one's own well-trained nurse, who may be, indeed, one's first and often only assistant. Sterile rubber gloves are insisted on. They should be used also between operations when making examinations, changing dressings, etc.

American Medicine, Philadelphia.

December.

58 Ready Tables for Modified Milk. J. O'Malley and A. O'Malley, Philadelphia.
59 *Clinical Observations on Uncinariasis. E. C. Shattuck, Manila, P. I.
60 Syphilitic Enlargement of Salivary Glands. B. C. Gile, Philadelphia.
61 Congenital Anatomic Deficiencies. C. H. Muschlitz, Philadelphia.
62 *Unusual and Interesting Muscular Anomalies. H. E. Radasch, Philadelphia.
63 Sanitary Score Card as Factor in Inspection of Dairy Farms. E. M. Santee, Washington, D. C.
64 Intumescence of Lower Turbinate; Saw Knife for Its Reduction. J. G. Parsons, Brookings, S. D.
65 Doubling Reading Power in Amblyopia by Crossed-Cylinder Reader. G. M. Gould, Philadelphia.

59. **Uncinariasis.**—Shattuck gives an account of recent work done on uncinariasis in the Bilibid prison, Manila. For some time past routine examinations have been made of the blood, urine and feces in all cases. Since Oct. 29, 1906, approximately 1,000 examinations have been made, showing 243 cases of uncinariasis admitted from quarantine to hospital. Of those admitted to the hospital from all sources he had notes of 492 cases. Among the symptoms noticed in the majority of these cases were headache, vertigo, insomnia, dyspnea, palpitation, colic, constipation or diarrhea, brown or yellow mucus or bloody stools, albuminuria and edema. In many cases there was moderate fever. A number were complicated by amebic dysentery or beriberi. Some cases showed no clinical symptoms, the microscopic test alone revealing the condition. The most severe cases were those complicated with chronic intestinal catarrh. With timely treatment, the prognosis in uncomplicated cases is good. He has used with good effect Phillip's formula, which is as follows: 2.5 grams of oil of eucalyptus; 3.5 grams of chloroform, and 40 c.c. of castor oil, divided into two doses and given on an empty stomach half an hour apart. He has increased the dose by giving 30 c.c. of the same formula, repeating it in half an hour; the patient first receives a dose of magnesium sulphate, and two hours after the second dose another dose of magnesium sulphate. Fasting is necessary. Both thymol and eucalyptus produce good results, but Shattuck prefers the latter.

62. **Muscle Anomalies.**—Radasch reports the following muscle anomalies: A third head to the gastrocnemius; an accessory extensor pollicis (?); a digastric extensor brevis pollicis, and an accessory palmaris longus.

Journal of the Missouri State Medical Association, St. Louis.

December.

66 Plea for State Provision for Nervous Invalids. J. Punton, Kansas City.
67 Malformation of Rectum and Anus. W. H. Coffey, Kansas City.
68 Above All, the Clinician. W. G. Moore, St. Louis.
69 *Alimentary Intoxication in Infants. J. Zahorsky, St. Louis.
70 The Eye and the Nervous System. A. E. Derwent, Clinton.

69. **Alimentary Intoxication.**—Zahorsky holds it more reasonable to consider the alimentary intoxication in infants as coming from bacterial products in the intestine, than, as Finkelstein does, as due to faulty metabolism. He enumerates the three recognized types—the indolic, the saccharobutyric, and that type in which the proteids, hydrocarbons and carbohydrates are subject to bacterial decomposition, describes their mode of production and asserts that in any case the clinical syndrome known as alimentary intoxication deserves clinical recognition. Sugar is by no means a harmless substance. The old maxim that sweets may produce severe illness in children is corroborated, he asserts, by modern observations. He can recall many cases of sudden collapse in children fed on condensed milk and other foods high in carbohydrate content. He feels convinced that these were cases of alimentary intoxication. Even in breast-fed infants the collapse may occur if they are fed on other foods also.

Mississippi Medical Monthly, Vicksburg.

January.

71 President's Address before Tri-County (Miss.) Medical Society. D. W. Jones, Fernwood.
72 *Gunshot Wounds. O. N. Arrington, Vicksburg.
73 Three Cases of Constipation. H. C. Buck, Friars Point.

72. **Gunshot Wounds.**—Arrington confines his remarks to S. & W pistols and shotguns as being the cause of practically all the gunshot wounds seen by the majority of practitioners. Such wounds are always emergency cases to the physician first called in, and every practitioner should be well posted in this class of injuries in all its phases. Arrington considers the subject under the general head of gunshot wounds of the extremities, the skull and spine, the thorax and abdomen, with special consideration of injuries to vessels, nerves and bones. Common sense and proper appreciation of the end in view should govern the treatment in all cases. Gunshot wounds may be considered aseptic in the absence of positive evidence to the

contrary. Wounds of the chest without shock call for no interference; severe continuous shock demands enlargement of the wound for inspection. Wounds of the spinal cord are treated on the same general principles as fracture of the spine. The prognosis is always bad.

Texas State Journal of Medicine, Fort Worth.

December.

74 Mission of Municipal or State Sanatorium for the Tuberculous, and Urgent Need of More Institutions of This Kind. S. A. Knopf, New York.
75 *Trachoma in School Children of Dallas. W. E. Howard, Dallas.
76 Operative Treatment of Appendicitis. A. C. Scott, Temple.
77 Two Cases of Renal Tuberculosis. P. Howard, Houston.

75. Trachoma.—Howard finds that in Dallas, out of an aggregate of 7,171 school children, 310, or about 4 per cent., had trachoma. For treatment he suggests that in the proliferative stage the lids should be rolled, followed by massage and a bichlorid solution. In corneal involvement the eye should be splinted with atropin and at times a pressure bandage applied; selected cases respond readily to the copper sulphate stick lightly applied. Pannus should be treated by massage with boric acid powder sprinkled between the ball and the lid. In the atrophic stages of the disease copper cataphoresis can be used to advantage.

Journal of the Michigan State Medical Society, Detroit.

December.

78 The Psychasthenic States. C. W. Hitchcock, Detroit.
79 One Year's Experience in Home Treatment of Tuberculosis. W. M. Donald, Detroit.
80 *Diet in Tuberculosis. J. A. Johnson, Greenville.
81 Tuberculosis from a Surgical Standpoint. D. K. Black, Greenville.
82 Cases of Oto-Antritis, Tympano-Mastoiditis, and Cerebellar Abscess. E. Amberg, Detroit.
83 Rectal Valves. J. A. McVeigh, Detroit.

80. Diet in Tuberculosis.—Johnson discusses diet in tuberculosis and incidentally mentions two important points: 1, to make sure that the patient is not taking some nostrum in addition to what has been prescribed for him, a practice which is not uncommon, as quick cures are always attractive; secondly, that nationality and usual mode of life of the patient are factors to be considered. Many diet lists intended for tuberculous patients are taken from works of German writers. A German or German-American might thrive on them, whereas an Englishman, Frenchman or American would find it difficult to take some of the articles advised, and vice versa. Johnson considers that alcohol is best avoided except in the last stage. Here again, however, he says nationality and habit must not be disregarded. A quantity of wine or beer at dinner varying with individual needs may be allowed.

Colorado Medicine, Denver.

December.

84 Acute Bronchopneumonia. J. G. Hughes, Greeley.
85 *Treatment of Pneumonia. C. Johnson, Montrose.
86 Pneumonia in Infants. W. T. Little, Canon City.
87 Case of Syringomyelia. F. L. Barrows, Boulder.

85. Pneumonia.—Johnson discusses the treatment of pneumonia and states that in the hospital with which he is connected a palatable mixture, which can be kept for a considerable time without deterioration, and has the following formula, is kept in stock: Sodium bromid, fluidextract of ergot, alcohol, of each ʒi (30 c.c.); glycerin, ʒii (60 c.c.); pure water Oi (480 c.c.). A teaspoonful is given every hour, or as directed. As soon as the effect of the hourly dosage is shown by the lessened pain and expectoration, the interval between doses is lengthened to two or three hours and the administration in this way is continued for several days. The treatment seems to work equally well with children and adults, though alcoholics respond poorly.

Alabama Medical Journal, Birmingham.

December.

88 *General Principles of Abdominal Drainage. G. S. Brown, Birmingham.
89 Symptoms and Treatment of Pyonephritis and Nephrolithiasis. G. Torrance, Birmingham.
90 Diagnosis and Clinical Types of Malarial Fever. S. H. Mann, Ensley.
91 Dysentery, Etiology and Pathology. J. Douglass, Birmingham.

88. Abdominal Drainage.—Brown emphasizes the fact that the principles of drainage are more important than the selection of drainage material and the application. Because of the superior resisting power of the peritoneum it is not necessary to drain the peritoneal cavity merely because it has been contaminated, but this can not be said of the muscle and fat of the wound of the abdominal wall, which may become infected by a gangrenous appendix, for instance, being drawn over it. The terms "pack" and "drain" should not be used interchangably. A drain will not pack and a pack will not drain. The idea of a drain should not be to conduct the secretions out of the wound, but to insure the wound staying open so that the secretions can get out.

Illinois Medical Journal, Springfield.

December.

92 *Hysteria and Neurasthenia; Their Nature and Treatment Contrasted. L. H. Mettler, Chicago.
93 *Practical Venereal Prophylaxis. D. Lewis, Chicago.
94 *Rapid Osteoclasis Versus Osteotomy. F. B. Lucas, Peoria.
95 *Paralysis of Legs in Children. E. W. Ryerson, Chicago.
96 *Scopolamin and Morphin as a Preliminary of General Anesthesia. C. U. Collins, Peoria.
97 Estivoautumnal Malaria. C. A. W. Zimmerman and W. Wilhelmj, East St. Louis.

92. Abstracted in THE JOURNAL, June 22, 1907, page 2150.

93, 95 and 96. Abstracted in THE JOURNAL, June 22, 1907, page 2151.

94. Osteoclasis Versus Osteotomy.—Lucas considers the advantages of osteoclasis over osteotomy to be: 1, Elimination of possible infection dangers from open incision method; 2, rapidity of operation; 3, the fact that pain is not complained of once in twenty cases and is never severe; 4, rapid union on account of slight periosteal disturbance; 5 (and this is not mentioned anywhere in any available authorities), increase of stature after bowlegs and anteriorly bent tibia correction.

Journal of Cutaneous Diseases, New York.

December.

98 *Opsonic Method in Skin Diseases. A. Whitfield, London, Eng.
99 *Bacterial Injections in Treatment of Suppurative and Tuberculous Diseases of Skin After Method of Wright. V. M. von Eberts, Montreal, Can.
100 *Bacterial Injections in Treatment of Diseases of the Skin. J. F. Schamberg, N. Gildersleeve and H. Shoemaker, Philadelphia.
101 *Cytoryctes Variolæ; Organism of Smallpox. G. N. Calkins, New York.

98. Abstracted in THE JOURNAL, Oct. 5, 1907, page 1215.

99, 100 and 101. Abstracted in THE JOURNAL, Oct. 5, 1907, page 1214.

Journal of Advanced Therapeutics, Rahway, N. J.

December.

102 *Action of Radiant Light Bath in Nervous Diseases. T. D. Crothers, Hartford, Conn.
103 Production of Sterility by Roentgen Rays. F. B. Granger, Boston.
104 *Is Sterility at Will Possible Under Application of Roentgen Rays? J. Rudis-Jicinsky, Cedar Rapids, Iowa.
105 Cancer and Its Treatment by Cataphoric Sterilization. (Continued). G. B. Massey, Philadelphia.

102. This article appeared in the *New York Medical Record*, Nov. 23, 1907, and was abstracted in THE JOURNAL, Dec. 7, 1907, page 1953.

104. Voluntary Roentgen-Ray Sterilization.—Rudis-Jicinsky's article suggests that the Roentgen ray is an efficient agent for sterilizing males without interfering with the sexual appetite and capacity.

Buffalo Medical Journal.

December.

106 *Sanitary Work in the State of New York. E. H. Porter, Albany, N. Y.
107 Acinitis Prostatica. J. H. Dowd, Buffalo, N. Y.

106. This article was published in the *New York Medical Journal*, Nov. 9, 1907, and was abstracted in THE JOURNAL, Nov. 16, 1907, page 1715.

Wisconsin Medical Journal, Milwaukee.

December.

108 *Nerve Lesions Complicating Simple Fractures of Long Bones and Their Treatment. K. Doege, Marshfield.
109 *Simple Ulcer of Bladder in Female. M. W. Dvorak, La Crosse.
110 *Early Diagnosis of Gastric Carcinoma. W. Ackermann, Milwaukee.
111 *Management of Labor. F. W. Epley, New Richmond.

108 to 111. Abstracted in THE JOURNAL, Aug. 31, 1907, page 794.

American Practitioner and News, Louisville.

December.

112 Diagnosis and Treatment of Tuberculosis of the Kidney. J. M. Morris, Louisville, Ky.
113 Emergencies and Short Reports of Emergency Cases. E. Marshall, Louisville, Ky.
114 Anesthesia, General and Local. C. E. Montgomery, Louisville, Ky.

Journal of the South Carolina Medical Association, Greenville.

January.

115 Medical Diplomacy. R. E. Hughes, Laurens.
116 Scarlet Fever. D. Furman, Greenville.
117 Uncinariasis. W. Weston, Columbia.
118 Strangulated Hernia. C. B. Earle, Greenville.
119 The Stomach. A. D. Cudd, Spartanburg.

Journal of the Kansas Medical Society, Columbus.

December.

120 Senility. L. O. Nordstrom, Assaria.
121 Essential Points in the Diagnosis of Nervous Diseases, with Case Report. O. D. Walker, Salina.
122 Significance of Hydrochloric Acid in Gastric Carcinoma. J. G. Sheldon, Rosedale.
123 The Sunflower. J. N. Winegar, Hamilton.
124 Scarlet Fever. G. M. Anderson, Beverly.
125 How Not to Do It. E. T. Shelly, Atchison.
126 Mercurial Stomatitis. D. D. Haggard, Phillipsburg.

Ophthalmology, Milwaukee.

October.

127 Ophthalmoscopic Appearances in Chronic Cyanotic Polycythemia. E. Jackson, Denver.
128 Killian Frontal Sinus Operation; Its Relation to Ophthalmology. Use of Roentgen Ray in Sinus Disease. H. G. Langworthy, Dubuque, Iowa.
129 Pulsating Exophthalmos Treated by Incision of Dilated Orbital Vein. H. Gifford, Omaha.
130 Keratitis Disciformis. W. Zentmayer, Philadelphia.
131 Posterior Sclerotomy as a Preliminary to Iridectomy in Secondary Glaucoma. C. Zimmerman, Milwaukee, Wis.
132 The Fogging Method Applied to Treatment of Eyestrain. P. Fridenberg, New York.

Annals of Otology, Rhinology and Laryngology, St. Louis.

September.

133 Etiology of Erysipelas. C. R. Holmes, Cincinnati.
134 Purulent Affection of Labyrinth Consecutive to Disease of Middle Ear; Pathology. C. J. Blake, Boston.
135 Symptomatology and Diagnosis of Labyrinthitis Consecutive to Purulent Otitis Media. H. O. Reik, Baltimore.
136 Treatment of Purulent Affection of Labyrinth Consecutive to Disease of Middle Ear. J. D. Richards, New York.
137 Suppurating Middle Ear Diseases of Infancy and Childhood. S. J. Kopetzky, New York.
138 Influence of Imperfect Nasal Respiration on Oral Cavity. E. E. Foster, New Bedford, Mass.
139 Duty of Restoring Hearing by Operation in Chronic Aural Suppuration. C. J. Heath, London, Eng.
140 The Lymphoid Tissues of Fauces in Systemic Infections. J. L. Goodale, Boston.
141 Case of Profound Streptococci Infection of Aural Origin Treated by Operation and Vaccination with Antistreptococcic Serum, Followed by Death from Meningitis. W. S. Bryant, New York.
142 Rosenmueller's Fossæ and Their Importance in Relation to the Middle Ear. F. P. Emerson, Boston.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

December 28.

1 The Personal Factor in Diet. C. J. MacAlister.
2 Constitutional Development and Social Progress of Boys and Girls from Infancy. F. Warner.
3 Four Cases of Infantile Gangrene of Cornea in Which the Treponema Pallidum Was Found. S. Stephenson.
4 Revealed Tuberculosis in Children at School Ages, from Four to Fifteen Years. H. C. Lecky and W. C. Horton.
5 Cases of Streptococcal Meningitis. W. J. Wilson.
6 Case of Diarrhea, Erythema and Asthma Apparently Due to Nasal Disease. J. W. Stenhouse.
7 Treatment of Pyorrhea Alveolaris by Inoculation with Bacterial Vaccine. D. W. Carmalt-Jones and J. E. Humphreys.
8 Appendicostomy in Chronic Dysentery. J. A. Pottinger.
9 Non-tuberculous Intranasal and Postnasal Abnormalities; Their Recorded Association with Tuberculosis. W. C. Rivers.

British Medical Journal, London.

December 28.

10 *Mental Origin of Neurasthenia and Its Bearing on Treatment. D. Drummond.
11 *Tuberculous Chlorosis. A. James.
12 *Automatic Rhythm of the Heart. A. M. Gossage.
13 *Locomotor Ataxia; Its Early Recognition and General Management. E. A. Dent.
14 Open Method of Ether Administration. F. W. Bailey.
15 Open Method of Administering Ether. A. Brownlee and J. L. Thomas.
16 Malignant Endocarditis Lasting Over Six Months Without Bruit. R. Capes.

10. Neurasthenia.—Drummond maintains that neurasthenia is a definite, genuine disease of mental origin and amenable to treatment. Its physical symptoms are without pathologic basis (in any individual case this must, of course, be ascertained by careful physical examination before diagnosing neurasthenia). The symptoms are as real to the patient as though a physical lesion existed. The determining factor calling attention to a definite organ may be a functional derangement, a recognized and dreaded hereditary tendency or an incautious professional suggestion. The mental history must be sought for; with rare exceptions an established nervous temperament has been inherited. It is unfortunate that there is no word in the language that would be understood by patient, friends and physicians alike, to convey the unequivocal significance of the term "nervous." Insanity will not infrequently be found in the family history. In early life, nothing particularly abnormal may have shown, but there is a tendency to attach undue importance to matters that affect personal feelings. For a time usually the patient struggles against the domination of particular ideas or feelings, but later an illness or shock breaks down the remnant of control. He abdicates will power and takes the path of least resistance. Drummond holds that overwork, mental strain, the grief of bereavement or alarming shock do not themselves produce neurasthenia, and can not be said to be its cause, though they contribute to its development. He emphasizes the damaging effect of uncontrolled bad habits of thought in early life. It is much to be regretted that the terms neurotic, neurasthenic, hysterical and hypochondriacal are, on the lips of the majority of clinical teachers, terms of opprobium, and this is further emphasized by the entire omission of the subject from ordinary teaching and examination. He cautions against giving suggestions to or hurting the susceptibilities of nervous patients, for it is impossible to foresee the effect of a careless statement on a none too stable mental organization. Among the points indicating the neurotic nature of symptoms is a tendency of the patient to refer to them as constant, to describe them in exaggerated terms and as always increasing, and to bring with him to the physician some sympathetic friend who will emphasize his story. In neurasthenia there is an ever-increasing nervousness, a valuable diagnostic point; for it commonly happens that in case of organic lesion, complicated, and it may be masked, by neurasthenic symptoms, the functional aspect becomes less noticeable and the patient acquires increasing control as the serious mischief advances. A judicious and exhaustive physical examination serves the double purpose of setting at rest the question whether or not there is organic disease, and of convincing the patient that the physician fully understands his case. The personal factor can not be overlooked or depreciated, after a careful and correct diagnosis. Treatment calls for a combination of insight, firmness and sympathy, with courage to speak and act firmly. What we have to treat is not a group of morbid symptoms, but a specific morbid state of mind and nervous system, and the only rational line of treatment consists in an honest and straightforward statement to the patient, dealing with the facts of the case, entering fully into the pathology and passing lightly over symptoms. The power to help and encourage our nervous invalids undoubtedly increases with experience and practice. The key to success lies in the proper management of the patient's mental state. The all-important element of the Weir Mitchell treatment is the isolation under the physician's control. The other matters are purely subsidiary. The number of lasting cures obtained in this way year by year strengthens Drummond's conviction that the theory is true and the practice sound.

11. Tuberculous Chlorosis.—James looks on this condition as one that occurs in individuals, who, as the result of hereditary or acquired causes, have given indication that they possess that low resistance power to the tubercle bacillus that is best described by the old-fashioned phrase, "the tendency to consumption." In what way and to what extent this blood defect may be salutary as regards tuberculous lung disease can

only be conjectured. James' idea is that it may be so by inducing an air hunger, thus stimulating lung function and nutrition. As the quality of the blood is good in such cases the improvement of the general health, rather than of the blood, is what is required.

12. **Automatic Rhythm of the Heart.**—Gossage reviews the arguments as between the myogenic and neurogenic causation of the automatic rhythm of the heart, and concludes that the myogenic theory is not incompatible with any known phenomena of the heart beat, while it affords the best explanation of many of them. The complete myogenic theory having the more weighty evidence in its favor should be accepted until stronger arguments are brought against it. The conception that the rhythm is purely muscular in its origin does not preclude the possibility of the beat being influenced by outside nervous impulses, which would give a sufficient explanation of the large nerve supply to the heart.

13. **Locomotor Ataxia.**—Dent discusses locomotor ataxia in the preataxic, the ataxic and the paralytic stage. He considers the general management of this last stage and the special indications in regard to the bladder, dyspnea or laryngeal crises, perforating ulcers, fractures of bones and ataxia. For this last he considers Frenkel's exercises the best form of treatment, and describes their application. In some cases Roentgen rays may be serviceable, though he regards the improvement gained as the result of psychical impression. Thermal treatment and suspension, as well as faradic and galvanic currents, have been used with varying success, though even here the psychical effect is probably the most important. Tabetic patients ought not to marry. Cold and damp aggravate, equable warm and dry climate alleviates, the pains. For drugs he considers potassium iodid and mercury over-rated. Aluminum chlorid two or three times a day is beneficial, especially for the pains. Zinc phosphate and gold chlorid have been used successfully, and arsenic is undoubtedly of service. strychnin, ergot, cannabis indica, calabar bean, nitroglycerin and sodium salicylate have their advocates. Phenacetin and antipyrin are useful, but not without danger. Testicular juice, spinal cord and brain substance and spermin have not proved satisfactory in his experience.

Medical Press and Circular, London.

December 25.

17 *Serum Treatment of Typhoid. Chantemesse.
18 *Interstitial Keratitis from a Modern Standpoint. S. Stephenson.
19 Eyestrain. H. C. Mooney.
20 Effects of Roentgen Rays on Lymphatics and Myeloid Leukemia. E. Epstein.
21 Tuberculosis as Factor in Irish Death Rate. W. R. Macdermott.

17. **Typhoid.**—Chantemesse says that during the six years, April, 1901, to July, 1907, 5,621 cases of typhoid were treated in the Paris hospitals, with a death rate of 17 per cent. Since then a thousand patients have been treated in his fever wards, with only 4.3 per cent, mortality, the treatment comprising cold baths and the antityphoid serum. The improvement is more marked the earlier the serum is injected after the onset of the disease, i. e., before the organic resistance has broken down. He has not lost a single patient in his fever service during the last six years in whom the injection has been made within the first seven days of the disease. The blood pressure goes up within a few hours of the injection, enough often to dispense with cardiac tonics. The urinary secretion is increased. The influence of the serum on the temperature curve is appreciable for ten or twelve days, after which either convalescence sets in, or the temperature continues to fall until recovery. Convalescence is usually rapid in patients treated early. Complications have been infrequent. He speaks highly of the ocular reaction and describes the preparation of the test solution and its method of application.

18. **Interstitial Keratitis.**—Stephenson says that interstitial keratitis is not a primary affection of the cornea, but is probpart of the uveal tract. It is nearly twice as frequent in females as in males, and four-fifths of the cases occur between the ages of 5 and 15 years. In about two-thirds of all cases it is associated with hereditary syphilitic stigmata, dental, facial or ocular. Tuberculosis, acquired syphilis, influenza, malaria and sleeping sickness are other causes. Given a predisposition, any local or general lowerer of resistance may excite it. Ulceration of the cornea is frequent. Keratitis is bilateral in three-fourths of the cases, though the interval between the attacks of the eyes may be several years. Recurrences occur in one-fifth of the cases, and are more intractable in cases treated without mercury. The cause is the deposit and multiplication in the cornea of the *Treponema pallidum*, derived primarily from the uveal tract. The disease does not form more than 1 per cent. of the cases in a special eye department. In mild cases the opsonic curve is high, even before the injection of the serum, viz., 2-1. In severe cases it is low before the injection, after which there is a sudden and marked rise during the three or four following days, corresponding to wholesale destruction of bacilli throwing toxic products into the blood of one already intoxicated. Care must be observed to avoid giving the patient too severe a shock, or there is risk of inhibiting the production of opsonins. The opsonic curves explain Chantemesse's dictum of 1902 that: "The graver the illness the smaller must be the dose of the serum." He continues the use of the cold baths because they are necessary to assist the patient in resisting the pyrexial reaction that follows the injection.

Dublin Journal of Medical Science.

December.

22 Presence of a Trypanosome in an Irish Bat. A. E. Mettam.
23 Functional Spastic Paraplegia. J. Craig.
24 Intestinal Colic. C. G. Sherlock.
25 Biology and Therapeutics. R. J. Rowlette.

Indian Medical Gazette, Calcutta.

November.

26 Fowl Spirillosis. M. F. Reaney.
27 Blackwater Fever in Jeypore Agency. F. G. de Cruz.
28 What Is Really Known of the Cause of Elephantiasis. S. R. Christophers.
29 Recent Developments in Eye Surgery. J. M. Macphail.
30 Some Forms of Headache. R. H. Elliott.
31 Radical Cure of Hydrocele. L. G. Fink.
32 Operative Treatment of Hydrocele. L. M. Banerji.
33 Cases of Hydrocele. W. C. Benthall.
34 Case of Viperine Snake Poisoning. Recovery. F. Wall.

December.

35 Notes on Twenty-six Cases of Malta Fever in Natives of India. W. F. Brayne.
36 Relapsing Fever. E. Landon.
37 Sixty-one Eye Operations in One Day. H. Gidney.
38 Case in Which Thoracic Duct Was Injured During Removal of Cancerous Glands of the Neck. T. C. Rutherford.
39 *Rats and Guinea-Pigs as Plague Barometers vs. Rat Destruction. R. O. Saigol.
40 *Quinin Sulphate as Factor in Causation of Blackwater Fever. D. McCay.
41 Multiple Abscesses of Liver. Recovery. R. M. Das and F. G. Hurst.
42 *Case of Snake-bite. R. Gandoin.
43 *Russell's Viper Bite Treated by Permanganate of Potash. E. J. Murphy.

39. **Rats as Plague Barometers.**—Saigol argues the futility of trying to exterminate rats, for even where the efforts have been most successful, and rats have been slaughtered in hordes, no appreciable result appears to have been made on the rat tribe. The true course lies in rat-proof houses, sanitation and cleanliness. But he further makes the novel suggestion that guinea-pigs or rats should be kept in cages in the house. This measure would act as a plague barometer, for if any of the rats died, they could be examined for plague. Also they would act as flea catchers and retainers, for the fleas will stay with them rather than attack humans. Finally, they would be locality indicators, for the sick rat has a tendency to wander, and the finding of a dead plague rat does not necessarily indicate that the plague was contracted where the rat was found, whereas the infection of a caged rat renders it clear that the danger spot is there. The animals should be periodically inspected by the officials and freed from their fleas if necessary.

40. **Quinin Sulphate and Blackwater Fever.**—In a special note, McCay, as the result of experimental investigation has found that sulphates in any form upset the normal osmotic equilibrium between the red blood cells and the plasma, causing a serious decrease of the salts in the latter, and thus increasing endosmosis into the red cells and causing them to burst and extrude their hemoglobin. He suggests that the hemolysis in blackwater fever is due to: 1, The injury to the stroma of the

red blood cells caused by the malarial parasite; 2, the presence of a hemolysin; 3, administration of sulphates. Where the first two conditions are insufficient of themselves to produce blackwater fever, the sulphates, by abstracting the salts from the plasma, may act as the determining factor. It was further found that the chlorids, on the other hand, increased the resisting power of the blood, especially quinin hydrochlorid combined with sodium chlorid and dilute hydrochloric acid. Quinin hydrochlorid should, therefore, be substituted, with or without sodium chlorid and dilute hydrochloric acid, in malarial cases in regions where blackwater fever is prevalent. Alkaline carbonates and compounds of alkalies with vegetable acids and potassium salts should likewise be avoided in malaria.

42. **Snakebite.**—Gandoin reports a case of cobra bite of the index finger treated with ligature, scarification, kneading and hot water applications to encourage bleeding, while potassium permanganate was well rubbed into the wound. Dry gangrene set in and the finger was removed fourteen days later. The man recovered with extended and stiff fingers.

43. **Id.**—Murphy records a case of bite on the right foot by a Russell's viper. Warm irrigations with permanganate solution, one gallon of a 10 grains to the ounce solution, was used. The wound was then dressed with potassium permanganate. The patient was under treatment for two months, but recovered.

Clinical Journal, London.

December 18.

44 New Growth of the Lung. N. Moore.
45 Dysentery. F. M. Sandwith.
46 Clinical Afternoon at Poplar Hospital for Accidents. Openshaw, Poland, Rigby.

Annales de l'Institut Pasteur, Paris.

November, XXI, No. 11, pp. 833-927.

47 Coloration of Brown Bread. (Mode de coloration du pain bis.) G. Bertrand and W. Mutermilch.
48 Manner of Growth of Zopf Bacterium. (Tropismes du "bacterium zopfii" Kurth.) E. Sergent.
49 Hematozoon of the Squirrel. (Hæmamœba vassali Lav.) J. J. Vassal.
50 Pigmented Cells of the Vertebrates. E. Golovine.
51 Preventive and Curative Power of Human Serum in Infection Due to the Trypanosome of Nagana. O. Goebel.
52 Six Trypanosomiases of Western Africa. Cazalbou.

Bulletin de l'Académie de Médecine, Paris.

December 9, LXXI, No. 41, pp. 401-416.

53 Alcoholism and External Tuberculous Processes in Adults and Children. P. Reynier.

December 17, No. 43, pp. 477-570.

54 *Pulmonary Tuberculosis and Atheroma of the Aorta. (Tuberculose pulmonaire et athérome.) E. Boinet.
55 Malignant Branchiomas of the Neck and Mediastinal Tumors. H. Duret.
56 *Case of Black Sweat. (Cas de melanhydrose.) R. Blanchard.
57 Epidemiology of Barracks. (Epidémiologie des casernes.) E. Delorme.

54. **Pulmonary Tuberculosis and Atheroma of the Aorta.**—Boinet states that he found evidences of atheroma in the aorta and other large arteries in 125 out of 385 tuberculous cadavers. He analyzes the various forms of tuberculous processes encountered in this material, calling attention to the necessity for prophylactic measures against tuberculosis in persons with atheroma. The comparative frequency of the combination of atheroma and tuberculosis and the dangers of the frequently ignored tuberculosis in these conditions render the subject one of vital interest. Pulmonary tuberculosis accompanying atheroma is generally a torpid, latent process, easily overlooked unless systematically sought for. Many elderly persons with atheroma, who are supposed to have merely an ordinary catarrhal affection of the air passages, are in reality tuberculous and their sputum is liable to spread infection. The fibrous form of tuberculosis is most frequent in the atheromatous. It is characterized by sclerosis, emphysema of the lungs and dilatation of the right heart. The suprarenal capsules were the seat of tuberculous lesions in 65 of the total 125 cases. The complete suprarenal syndrome with Addisonian pigmentation and asthenia was observed in 20 cases; it coexisted always with sclerous or tuberculous lesions of the suprarenal capsules.

56. **Case of Black Sweat.**—Blanchard's patient was a boy of 13 and the pigmented sweat appeared only on the lids and nostrils and below the eyes, where it formed patches like black varnish. These patches had appeared at times during the last three years, and their symmetrical arrangement, their intermittency and their connection with normal sweat conditions and with the state of the weather suggest that the chromhydrosis is a kind of neurosis, but not a trophoneurosis, as there are no organic lesions. Blanchard classes it with essential asthma and vitiligo as an exokinetic neurosis, that is, a neurosis determined by excitation from without, either meteorologic or physico-chemical. Chemical study of the pigment showed properties resembling those of the fuscin or brown pigment of the retinal epithelium, and the localization of the main deposits of the pigment on and below the lower lids confers additional interest on this fact.

Presse Médicale, Paris.

December 14, XV, No. 101, pp. 813-820.

58 *Treatment of Metritis by Suction Hyperemia. (Traitement des métrites par l'application de ventouses sur le col—méthode de Bier.) F. Jayle and R. Lœwy.
59 Acute Suppurative Periostitis. A. Bernard.

December 21, No. 103, pp. 829-836.

60 Combined Action of Gastric and Pancreatic Juices on Starch. (Action synergique des sucs gastrique et pancréatique sur les feculents.) H. Roger and L. G. Simon.
61 Functioning of the New Outlet to the Stomach After Gastroenterostomy with a Permeable Pylorus. M. Guibé.

December 25, No. 104, pp. 837-844.

62 Bismuth in Stomach Affections. (Le sous-nitrate de bismuth dans les maladies de l'estomac.) F. Levy.

58. **Suction Hyperemia in Treatment of Metritis.**—Jayle and Lœwy report seven cases of metritis in which local hyperemia was induced with a special cupping glass devised to fit over the cervix. The suction pump connected with it is arranged so that the pressure of the thumb on the piston aspirates the contents of the glass, leaving the other hand free. All the patients were relieved of pain and were much improved otherwise. The suction glass aspirates the secretions and detritus in the cervix, and induces hyperemia. If there is ulceration there may be some bleeding from the surface, and the thin walls of a cyst may be ruptured. After a few applications the congestion in the pelvis subsides and the symptoms of inflammation in and around the uterus and adnexa gradually disappear, while ulcerations heal over. The suction is generally painful. On the whole, they say, this method of treatment is simple and easy, and the practitioner will be well content with it if he does not expect too much of it. Two illustrations are given of the cupping glass in place.

Semaine Médicale, Paris.

December 25, XXVII, No. 52, pp. 613-624.

63 Intestinal Occlusion Due to Inflammation in and Around the Sigmoid. (Les sigmo-perisigmoidites à forme d'occlusion.) F. Lejars.

Archiv für Gynäkologie, Berlin.

LXXXIII, No. 3, pp. 505-743. Last indexed Nov. 30, 1907, p. 1880.

64 *Suprarenals and Osteomalacia. (Nebennieren und Osteomalacie.) M. L. M. Bossi.
65 Ovarian Carcinoma from Primary New Formation of Follicles. ("Folliculoma ovarii.") A. Ingier.
66 Menstruation and Ovulation. G. Leopold and A. Ravano.
67 Activity of Ovary During Pregnancy. (Thätigkeit des Eierstocks in der Schwangerschaft.) A. Ravano.
68 Case of Ovarian Pregnancy. (Eierstocksschwangerschaft.) Busalla.
69 *Value of Puerperal Bacteriology. O. P. Mansfeld.
70 The Senile Uterus, Especially the Behavior of the Arteries. E. Fraenkel.
71 Elimination of Chlorids During Pregnancy, Especially in the Dropsy of Pregnancy and Albuminuria. (Ausscheidung der Chloride in der Schwangerschaft.) R. Birnbaum.
72 Present Status of the Ergot Question. (Heutige Stand der Mutterkornfrage.) A. Bennecke.
73 Brain Defects Due to Intrauterine Cerebral Hemorrhage, and Congenital Encephalitis. (Gehirndefecte und Encephalitis congenita.) L. Seitz.
74 Tumors Interfering with Childbirth. (5 Fälle von Geburtsstörungen durch Tumoren.) C. Riemann.
75 Instrumental Perforation of the Uterus. E. Weil.

64. **Osteomalacia and the Suprarenals.**—Bossi here reviews his theory in regard to the connection between the suprarenals and osteomalacia, and analyzes his experience with thirty-four patients with osteomalacia and his experiments on animals. In the first place he warns against assuming any special connection between osteomalacia and goiter, as nothing in his experience suggests its probability. He then gives the details

of the cases of osteomalacia in pregnancy in which the patients recovered under treatment with suprarenal extract. Skiagrams are added showing the increasing density of the bones of the pelvis after 23 injections of the suprarenal extract in the first case. The second patient, a woman of 39, required 104 injections before similar results were attained. The condition in this case was true osteomalacia marasmus, with very low resisting powers; the pregnancy was at the sixth month. After about 24 injections the treatment had to be suspended each time on account of symptoms of intolerance, a tendency to suffocation, chills, general discomfort and trembling, with a drawing feeling behind the sternum. These phenomena appeared about 20 minutes after the injection and gradually subsided after lasting about half an hour; they grew more severe with the increasing number of injections, so the injections were interrupted and resumed after a few days. The dose of 1 c.c. of 1 to 1,000 adrenalin was given three times a day, and the entire treatment was concluded between January 1 and March 3. The abdominal tension subsided under the injections and increased when they were suspended, giving the impression that the bones of the pelvis softened and sank in when the adrenalin was not being taken, and that they became hard again when it was resumed. This impression is confirmed by the skiagrams taken during the treatment and since. Both these patients had an almost painless delivery at term, but the second one required Cesarean section before the disproportionately large child could be delivered. In another case the osteomalacia pains recurred seven years after castration and continued for three years, when they vanished under suprarenal treatment. Another patient, a woman of 37, was freed from the disturbances of osteomalacia for four years by castration after her seventh pregnancy. Then pains and disturbances in gait recurred and skiagrams showed the bones of the pelvis to be very porous. Under treatment with suprarenal extract for thirty-three days the disturbances subsided and the general health rapidly improved. Ruffi, Tanturri and Gotelli have reported to him also a case each of recovery under suprarenal treatment. He gives skiagrams of four sheep before and after one suprarenal had been removed, the bones becoming markedly porous after the operation, with phosphaturia and general signs of osteomalacia. In conclusion he calls attention to the difference in the results in the acute and chronic cases, and especially in osteomalacia in the aged. The suprarenal treatment undoubtedly acts by improving the metabolism in general, and in senile osteomalacia the vital processes are at too low an ebb for much to be expected. The results of the experiments on sheep seem to confirm the assumption that the osteomalacia is the outcome of insufficiency of the suprarenals, especially during pregnancy. It is possible that the preparations of suprarenal extract promote the formation of bone by their dissolving properties. If the latter assumption is confirmed, it suggests the application of suprarenal treatment in rachitis, especially as a prophylactic measure. He has thus treated two little girls and a number of new-born puppies and rabbits, skiagrams in each instance showing increased ossification and more solid ossification than in the controls. Bossi's dosage was given in his former communications summarized in these columns. He used American or Italian suprarenal preparations in the different cases.

69. **Importance of Puerperal Bacteriology.**—Mansfeld states that examination of 40 afebrile and 14 febrile parturients showed that the lochia contained streptococci in a very large proportion of each series, but that the number of streptococci present was very much larger in the febrile cases. In all the cases of severe puerperal infection the streptococci were found in pure culture, while in the milder cases there was always mixed infection. An important finding was that in all the cases of extragenital fever the lochial discharge was found to be sterile.

Beiträge zur klinischen Chirurgie, von Bruns', Tübingen.

November, LVI, No. 1, pp. 1-262.

76 Prevalence of Echinococcus Affections in Mecklenburg. A. Becker.
77 Central Luxation of the Femur. A. Wörner.
78 *Experiences with Iodoform Filling for Bone Cavities According to von Mosetig-Moorhof. (Iodoformknochenplombe.) Meurers.
79 *Causes of Death After Laparotomies. (Todesursachen nach Laparotomien.) F. Selberg.
80 Indications for Posterior Gastroenterostomy. L. Arnsperger.

78. **Experiences with Iodoform Filling for Bone Cavities.**—Meurers writes from Marwedel's clinic at Aachen to describe in detail 45 cases of extensive bone defects in which the gap was filled with Mosetig's iodoform filling. It was found extremely valuable for the purpose, insuring rapid healing. It is especially useful in filling tuberculous foci in bones and in ostitic processes with or without concomitant joint affections. The filling permits more conservative treatment in resection of a joint, as it is generally sufficient to remove a thin sheet of cartilage and bore out the focus extending higher up into the stumps of the joint, filling the hole with the iodoform preparation. In osteomyelitic foci in bones the filling should not be injected until the affection has reached a chronic stage, and if there is still considerable suppuration the cavity should be cleaned out and kept open for several days under a tampon before the hole is plugged with the iodoform filling.

79. **Causes of Deaths After Laparotomies.**—Selberg has studied 100 cases of death after laparotomies at the Augusta Hospital at Berlin since 1900. Aside from the cases in which appendicitis, ileus or pancreatic necrosis were responsible for the fatal outcome, there were 20 cases in which the heart and lungs alone were responsible, including 3 cases of "chloroform death," 5 of heart failure after an aseptic laparotomy, and 3 of embolism. Examination revealed unsuspected cancer in 13 of the 20 cases, including all of the "lung deaths," 5 of the "heart deaths" and one of embolism. Some anatomic cause for the fatality could be discovered in every case, so that none can be attributed to pure shock. The heart failure occurred always in less than twenty-four hours after the laparotomy, while death did not occur in the lung cases until between the sixth and eleventh days, and the deaths from embolism occured on the fifth and sixth days.

Centralblatt für Chirurgie, Leipsic.

December 21, XXXIV, No. 51, pp. 1473-1504.

81 *Origin of "Pressure Cyanosis" of the Head. (Entstehung von Stauungsblutungen am Kopfe.) L. Kredel.
82 Operation of Esophageal Diverticulum. (Operation des Speiseröhrendivertikels.) Goldmann.
83 Plastic Restoration of Esophagus. (Zur plastischen Bildung eines neuen Oesophagus.) E. Bircher.

81. **"Pressure Cyanosis" of the Head.**—This condition of congestive hemorrhage in the head is generally induced by severe injury causing compression of the trunk. Kredel has recently had occasion to observe the pressure cyanosis in an infant on whom he had just operated for a large umbilical hernia, seventeen hours after birth. During the operation the liver had been handled and a powerful wave of blood driven through the liver and portal veins, backing up the blood above. The face and brow were soon studded with punctate hemorrhages. Reflex closure of the glottis and abdominal straining evidently cooperate in the production of the condition, as could be seen in the case described, which was almost like a physiologic experiment from the clear oversight of the phenomenon.

Centralblatt für die Grenzgebiete der Med. u. Chir., Jena.

December 19, X, No. 23, pp. 881-928.

84 *The Latest Researches on Osteomalacia. D. G. Zesas. Collective review. Commenced in No. 21.

84. **Recent Research on Osteomalacia.**—Zesas reviews 340 works on the subject of osteomalacia that have appeared since 1890, all dealing with the etiology and pathologic anatomy. The literature on symptomatology and treatment is to be studied later.

Centralblatt für Gynäkologie, Leipsic.

December 21, XXXIV, No. 51, pp. 1577-1608.

85 *Gigli's Contributions to Obstetrics. L. M. Bossi.
86 Twins from Single Ovum with Common Amnion and Knotted Cord. (Fall von einieligen Zwillingen.) G. Pallin.
87 *Mammary Gland and Ovary. (Brustdrüse und Eierstock.) P. Alsberg.
88 *Decapsulation or Slitting of Kidney in Eclampsia. (Nierenaushülsung oder Nierenspaltung bei Eklampsie.) A. Sippel.
89 Ventrofixation of Uterus or of Round Ligament. P. Rissmann.
90 Instrumental Perforation of Uterus. Kuntzsch.
91 Operative Treatment of Suppurative Parametritis. C. Francke.
92 To Avoid Leaving Compresses in Abdomen. (Schutz gegen das Zurücklassen von Bauchtüchern im Abdomen.) F. Lehmann.

85. **Gigli's Contributions to Obstetrics.**—This is an open letter by Professor Bossi to the Italian minister of public instruction and was published in the lay and medical press of Italy. The purpose of the letter is to call attention to Gigli's invention of the wire saw and of pubiotomy, both of which have carried his name around the world. In appreciation of his services to science, the authorities are entreated to appoint *him* on the faculty of the medical school at Florence. At present he is unattached, and Bossi asks the position of privatdocent for him.

87. **Connection Between Mammary Glands and Ovaries.**—Alsberg reports two cases of removal of both ovaries and tubes on account of cysts or abscesses, followed ten days and six weeks later by secretion of colostrum and milk in the breasts, so that drops of milk can be squeezed out. Grünbaum has recently published a similar case of secretion of milk after castration. One of Alsberg's patients had never been pregnant; the other had borne a child three years before, but did not have milk for it. In five other cases in which the uterus was retained after bilateral salpingo-oöphorectomy, menstruation apparently continued in two instances. The periodical bleeding in these cases presented the characteristics of the menses. In all these patients the mammary glands commenced to secrete colostrum and milk in two or three weeks after the operation. The menstrual type can thus be retained even after all ovarian tissue has been removed. Possibly scraps of ovarian tissue might have been accidentally left behind, but this does not explain the invariable absence of mammary secretion when part of the ovary was intentionally left.

88. **Decapsulation of the Kidney in Eclampsia.**—Sippel calls attention to a certain condition of the kidneys in eclampsia which indicates operative treatment. The intracapsular pressure is abnormally high, and slitting the capsule relieves the tension. The kidney does not feel hard but is soft or puffy. It is generally enlarged, with the properties of edematous tissues. Primary injury of the capillaries in the kidney by the action of a toxin allows serous fluids to pass through their walls, causing compression of the kidney tissue and consequent impairment of the kidney functioning. The assumption that eclampsia is due to toxic action explains these findings in the disease. The condition comes on more gradually than the "kidney glaucoma" due to congestion in the veins or ureter region. Incising the capsule relieves the tension or allows the escape of the accumulating transudation, and it is thus indicated in both forms. In the edematous variety it is indispensable that the uterus should be evacuated beforehand when the amount and the composition of the urine indicate serious impairment of normal kidney functioning. If pressure on the kidney causes pain, the trouble is probably the glaucomatous form, while absence of pain speaks for the toxic variety. The size of the organ is not a reliable criterion. Decapsulation alone may be sufficient in the toxic form, but the glaucomatous may require an incision besides.

Deutsches Archiv für klinische Medizin, Leipsic.

XCII, Nos. 1-2, pp. 1-198. Last indexed, Dec. 28, p. 2171.

93 Changes in the Nuclei of the Neutrophile Leucocytes. (Zu Arneth's "Verschiebung des neutrophilen Blutbildes.") H. Politzer.
94 Experimental Research on Posthemorrhagic Anemia and Its Relation to Aplastic Anemia. R. Blumenthal and P. Morawitz.
95 Influence of the State of Nourishment on the Size of the Heart. (Einfluss des Ernährungsstandes auf die Herzgrösse.) Schieffer.
96 Clinical and Bacteriologic Notes on Typhoid Fever, Especially Its Complications. (Abdominaltyphus.) H. Bennecke.
97 Polycythemia. F. Lommel.
98 Experimental Research on Formation of Deposits in Bile. (Bildung von Niederschlägen in der Galle.) L. Lichtwitz.
99 Mutual Relations of Tissues in Blood-forming Organs. (Wechselbeziehungen der Gewebe in den blutbildenden Organen.) P. Morawitz and E. Rehn.
100 •Action of Morphin Administered by Different Routes. (Wirkung des Morphiums bei verschiedenen Administrationsweisen.) R. Friberger.
101 Connection Between Anatomic Changes in the Glomerulus and the Kidney Functioning in Experimental Nephritis. (Anatomischen Glomerulusveränderungen und Nierenfunktion.) R. Takayasu.
102 Case of Intermittent Cramp of the Arms. (Dyskinesia intermittens brachiorum.) Oehler.

100. **Varying Action of Morphin Administered by Different Routes.**—Friberger writes from Upsala to describe tests of the action of morphin when administered by the mouth or rectum or by subcutaneous injection. He accepts the miosis induced by the action of the morphin as a reliable index of the effect of the drug on the system, and grades the results according to its degree and duration. He gives an illustrated description of the pupillometer he used for the tests.

Münchener medizinische Wochenschrift.

December 17, LIV, No. 51, pp. 2513-2580.

103 Application of Opsonins in Pulmonary Tuberculosis. (Opsoninbestimmung und ihre Anwendung bei Lungentuberkulose.) R. Bine and H. Lissner.
104 Comparative Tests of Diagnosis of Typhoid with Emulsion of Bacilli and with Ready-made Typhoid Diagnosticum. P. Schrumpf.
105 •Functional Behavior of Vessels in Trophic and Vasomotor Neuroses. (Funktionelles Verhalten der Gefässe bei Neurosen.) H. Curschmann.
106 •Bacteriologic Differentiation of Otitic Sinus Thrombosis, etc. F. Nuernberg.
107 •Roentgen Treatment of Renal Tuberculosis. (Nierentuberkulose.) E. Bircher.
108 Operative Cure of Pulsation Diverticulum of Esophagus. H. Gehle.
109 •Treatment of Inoperable Carcinoma of Uterus with Acetone. G. Gellhorn.
110 Infarcts in the Lungs as a Complication of Acute Gonorrhea. Mühlig.
111 Gangrene of Skin of Scrotum After Use of Tincture of Iodin. (Hodenhautgangrän nach Gebrauch von Iodtinktur.) O. Hanasiewicz
112 Aims of Instruction in Gynecology. (Frauenheilkunde.) O. von Franqué.

105. **Behavior of the Vessels in Neuroses.**—Curschmann reproduces tracings showing the functioning of the vessels in trophic and vasomotor neuroses. They demonstrate that in Raynaud's disease and sclerodermia presenting Raynaud symptoms, the arteries of the limb involved do not respond with normal reaction to stimuli but sometimes give a paradoxical reaction. He discusses this fact, coming to the conclusion that it must be due to a primary disturbance in the innervation. The plethysmographic findings were about the same in the cases of intermittent limping as in the trophic neuroses and in acroparesthesia of the vasoconstriction type—showing the relationship between these various affections.

106. **Bacteriologic Differentiation of Otitic Sinus Thrombosis.**—Nuernberg examined the sinus blood in five cases of sinus thrombosis and found streptococci in each specimen. He calls attention to these findings as an aid in differentiating otitic sinus thrombosis from other affections accompanied by high fever, before local manifestations develop. He describes an instructive case of high fever coming on a week after mastoid operation and evacuation of an abscess in the brain, six days after childbirth. The fever might have been due to incipient mastitis, puerperal fever, meningitis or sinus thrombosis, but the absence of other symptoms excluded the first three. An operation on the sinus was contemplated but postponed on account of the negative bacteriologic findings in the blood in the sinus. The severity of the symptoms caused the negative bacteriologic findings to be disregarded and preparations were made to open up the sinus, when signs of erysipelas were discovered, thus clearing up the diagnosis. Negative findings in the sinus blood should therefore exclude sinus thrombosis; at least, he asserts, they justify postponing the operation. The puncture to obtain the blood must be made deep and close to the bulb of the jugular vein, and during fever; otherwise there is danger of obtaining a negative result even when thrombosis actually exists, especially in case of isolated thrombosis of the bulb of the jugular vein.

107. **Roentgen Treatment of Tuberculous Kidney Affections.**—Bircher reports two cases of tuberculosis of the kidney in which the indicated and advised nephrectomy was refused. He exposed the affected kidney region to the Roentgen rays, keeping up the Roentgen treatment for a long time and witnessing the subsidence of the tuberculous affection and recovery of the patients. The rapid change in the aspect of the urine under the influence of the Roentgen exposures was most striking. The general health rapidly improved, the fever soon subsided and the cystitis was entirely cured. He believes that the Roentgen rays have an injurious influence on the development of the tubercle bacilli. No ill effect from the exposures

on the epithelium in the kidney was apparent. The rays were applied daily for fifteen minutes with a moderately hard tube at a distance of from 20 to 25 cm. The exposures were kept up for three months with a two weeks' intermission, in the first case. After three years of health the patient returned with slight urinary disturbances which promptly subsided under a few exposures. Both kidneys had been affected in this case. In the other case the left kidney alone had been involved, and Roentgen treatment was kept up for five weeks, followed by a health trip to the mountains. The patient is now in perfect health.

109. Acetone in Treatment of Inoperable Uterine Cancer.—Gellhorn's first report on this subject was published in THE JOURNAL, April 27, 1907. Further experience has confirmed the benefits of this palliative treatment of inoperable cancer.

Virchow's Archiv, Berlin.

CXC, No. 2, pp. 177-380.

113 A Blood Vessel Endothelioma Spreading in the Enlarged Vessels of a Diffusely Myomatous Uterus. (Blutgefässendotheliom.) Beckhaus.
114 *Secondary Cancers of the Skin. (Sekundäre Hautkrebse.) S. Daus.
115 Mesenteric Cysts of Embryonal Origin, with Remarks on Development of Cortical Substance of the Suprarenals and on Chorioepithelioma. F. Niosi.
116 Leukemia in Fowls. (Leukämie beim Huhn.) J. Kon.
117 Metaplasia of Epithelium in Bronchopneumonia. I. McKenzie.
118 Formation of Giant Cells in the Decidua. (Riesenzellbildung in der Decidua.) S. Oberndorfer.
119 Reobtaining of Diphtheria Toxin from Its Combination with the Antitoxin. (Wiedergewinnung des Diphtherietoxins aus seiner Verbindung mit dem Antitoxin.) J. Morgenroth and K. Willanen.

114. Secondary Cancers of the Skin.—Daus tabulates the particulars of 38 cases from the literature in which a primary internal cancer was followed by metastasis in the skin. He also relates a case of cancer of the stomach in a pauper of 77 which was accompanied by about 280 small hard tumors on the trunk and thighs, movable on their base with the skin above them. It is possible that the lumps in this case had existed prior to the cancer and had assumed cancerous properties later. In almost half the cases of secondary cancers of the skin on record, the primary tumor was in the digestive tract, in a fifth in the female genitals and in a sixth in the lungs.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

LXI, No. 1, pp. 1-183. Last indexed, Dec. 28, 1907, p. 2711.

120 Protection of the Ureter and Method of Draining in Extensive Evacuation of the Pelvis for Uterine Carcinoma. J. A. Amann.
121 *Practical Value of Leucocyte Count for the Diagnosis of Inflammatory Affections of Female Genitals. (Leukozytenbestimmung.) H. Albrecht.
122 *Conservative Treatment of Inflammatory Affections of Adnexa and Pelvic Connective Tissue. (Was leistet die konservative Behandlung bei entzündlichen Erkrankungen der Adnexe und des Beckenbindegewebes?) A. Hörrmann.
123 Bilateral Metastatic Ovarian Carcinoma with Primary Carcinoma of Sigmoid Flexure. F. Brunner.
124 Genital Tuberculosis with Bilateral Dermoid Cystoma. K. Logothetopulos.
125 *Primary Carcinoma of Female Urethra. (Primäres Karzinom der weiblichen Harnröhre.) Y. Karaki.
126 Hematoma of the Vulva. K. Rothlauf.

121. Practical Value of Leucocyte Count for Diagnosis of Inflammatory Affections of Female Genitals.—Albrecht's long monograph on this subject is based on 164 out of 200 cases in which the leucocyte count was made. The affections in question were acute pelvic peritonitis, a palpable tumor in the adnexa, a large exudate or abscess in the small pelvis, puerperal or abortion sepsis, or postoperative inflammatory processes. A number of case histories under each class are given in detail, the leucocyte count proving surprisingly instructive and reliable, especially the quantitative count, re-enforcing the findings of the qualitative count. The percentage of polynuclears at the time is an index of the severity of the affection, but large numbers of polynuclears do not indicate an unfavorable prognosis if only the absolute number of the polynuclears is increased in proportion to their percentage. The disappearance of eosinophiles and mast cells suggests severe infection. A decline in the absolute number of polynuclears with a simultaneous reduction in their percentage shows that the infection is subsiding. Sudden decline in the absolute number of polynuclears while their percentage shows only a small decline or an increase is a sign of unfavorable prognosis as it demonstrates that the emigration of polynuclears no longer keeps pace with their consumption, owing to exhaustion of the blood-forming organs or for other reasons. A sign of absolutely unfavorable prognosis is further a sudden decline in the absolute numbers of lymphocytes. When the number of lymphocytes is considerably below normal the infection may be regarded as especially serious. In all the cases studied the turn toward recovery was manifested in the blood picture by the marked relative increase in the absolute numbers of mononuclears and eosinophiles, sometimes rising above normal figures. Among the examples cited is one of puerperal sepsis with 14,300 leucocytes, including 84 per cent. polynuclears, 15.4 per cent. lymphocytes and 0.6 per cent. eosinophiles. The prognosis was regarded as favorable in this case, and the patient soon recovered. In another case the leucocytes numbered 28,000, including 74.5 per cent. polynuclears, 24 per cent. lymphocytes, and 1.5 per cent. eosinophiles. The fifth day there were 79.3 per cent. polynuclears, 19.3 per cent. lymphocytes, and 1.4 per cent. eosinophiles, pyemia then developed and the leucocytosis constantly increased to 52,000 on the day of death, with 88.5 per cent. polynuclears, 10 per cent. lymphocytes, and 0 eosinophiles. In another case the eosinophiles were 1.5 per cent., then 0.5 per cent., then 0 per cent. the thirteenth day when an abscess was discovered and evacuated, after which the patient rapidly recovered, the eosinophiles numbering 4 per cent. six days later.

122. What Can be Accomplished with Conservative Treatment of Inflammatory Gynecologic Affections.—Hörrmann refers especially to treatment with "weighting" and with superheated air in inflammatory affections of the adnexa and pelvic connective tissue. Such good results have been obtained with them that the percentage of cases in which an operation is regarded as indicated has been materially reduced in the last few years at Amann's clinic at Munich where he is assistant, being now only about 1 per cent. of the total material. An operation is regarded as unavoidable in all cases of acute, threatening symptoms from inflammation of the adnexa, pelvic connective tissue and peritoneum, and in all cases of tuberculosis of the adnexa and when conservative treatment fails to relieve and seems to be unable to restore conditions to normal. In a total of 1,600 cases these indications were present in only 7 out of 1,244 cases during the last five years, that is in 0.56 per cent. All the other patients recovered under conservative measures. These included, besides puncture and drainage, hydrotherapeutic measures, alcohol applications, thermophors, hot compresses, hot vaginal douches, superheated air and "weighting," that is application of a colpeurynter filled with mercury in the vagina, according to Pincus' technic. Massage is seldom used. With these conservative measures 99 out of every 100 women were clinically cured without operative intervention. The weighting treatment—*Belastungstherapie*—gave particularly good results in chronic inflammatory changes in the adnexa and around the uterus with their consequences (retroflexion), but it is contraindicated in all acute and subacute processes to which the system reacts with rise of temperature. It was applied in 70 cases. Fixed retroflexion is favorably affected by it. In 2 cases the uterus became freely movable after three or four sittings and all disturbances subsided. The method is unequaled, he asserts, for many cases of retroflexion, as it corrects the condition in such a simple and easy way. The colpeurynter does the whole work and the patient lies tranquilly in bed, the only disadvantage being that the vaginal passage sometimes becomes considerably stretched. The weighting also allows the differentiation of a solid tumor from an exudate and inflammatory tumor in the adnexa. One patient had a movable, round tumor to the right of the uterus, with pains in the region, no fever. Five applications of the mercury colpeurynter failed to alter in the least the palpation findings, and operation revealed a dermoid tumor in the right ovary. Another patient had a tumor in the adnexa on each side. The left tumor subsided under the mercury colpeurynter and measures to promote absorption, but the right persisted. The operation six months later revealed a large ovarian cyst in the right ovary. Another patient was attacked suddenly with vomiting, colic pains in the left abdomen and fever. After subsidence of the pains under bed rest and ice,

a large tumor could be palpated in the left ovary and the diagnosis wavered between pyoovarium and dermoid. After six applications of the mercury colpeurynter the tumor had vanished, leaving merely a hard resistance about the size of a plum, which is assumed to be a hematoma of the ovary. Pincus says in this respect that the weighting method protects the physician against serious errors. "In private practice," he adds, "the fate of the patient is at the same time the fate of the physician." His technic was followed in every respect. It was summarized in THE JOURNAL, May 20, 1905, page 1650.

125. **Primary Carcinoma of Female Urethra.**—Karaki reports a case which brings to twenty-nine the authentic cases of primary cancer of the female urethra on record. None of the patients was under thirty-six years old. The tabulated cases show that only two of the patients is known to have succumbed to recurrence after extirpation of the growth. Most of them are continent, although continence was not secured in the case reported.

Zeitschrift für klinische Medizin, Berlin.

LXIV, Nos. 3-4, pp. 193-376. Last indexed Nov. 2, 1907, p. 1565.

127 Behavior of Leucocytes of the Blood Under Action of Cold. (Verhalten der Leukozyten des Blutes bei Kälteeinwirkung.) Schnütgen.
128 Determination of Acetone in the Urine. (Azetonbestimmung im Harn.) S. Möller.
129 Absorption from the Stomach. (Magenresorption.) A. v. Torday.
130 Anatomic Changes in the Suprarenals in Arteriosclerosis. (Nebennieren bei Arteriosklerose.) H. Landau.
131 Clinical Importance of Urobilinogen, Its Chemical Properties and Color Reactions. ("Ehrlichsche Aldehyd-" und "eigelbe Diazoreaktion.") K. Thomas.
132 Dicrotic Pulse as Diagnostic Symptom in Aortic and Mitral Insufficiency. (Dikrotie.) L. F. Dmitrenko.
133 Transcortical Sensory Aphasia. (Eine als transkortikale sensorische Aphasie gedeutete Form aphasischer Störung.) M. Lewandosky.
134 Influence of Sitz Baths on Distribution of Blood. (Einfluss der Sitzbäder auf die Blutverteilung.) O. Bruns.
135 Blood Stasis Under Stimulus of Cold. (Rückstauung bei Kaltreizen.) Id.
136 Granulation of Red Corpuscles in Anemic Conditions. (Körnung der roten Blutkörperchen bei anämischen Zuständen.) S. Askanazy.
137 *Improved Method of Roentgen Therapy. (Neues radiotherapeutisches Verfahren.) R. von Jaksch.
138 Metabolism of Salts in Experimental Renal Dropsy. (Salzstoffwechsel bei exp. Nierenwassersucht.) H. Schirokauer.
139 Alcaptonuria. O. Gross and E. Allard.
140 Neutrophile Blood Picture in Infectious Diseases. (Neutrophiles Blutbild bei Infektionskrankheiten.) T. Brugsch.
141 Methods of Determination of Pepsin. E. Fuld.

137. **Improved Method of Roentgen Treatment.**—A thin sheet of lead allows the passage of rays that are liable to induce a dermatitis, and von Jaksch has found that silver is superior to it in this respect. A sheet of silver 0.02 mm. thick allows the passage of the rays that have a penetrating action while it seems to hold back all that can injure the skin. He has been using for some time and in numbers of cases a round protecting shield of silver of this thickness, and has been impressed with the penetrating action of the rays with entire absence of any cutaneous reaction. He describes in detail a case of myeloid leukemia in which rapid, intensive Roentgen treatment was applied, followed by the subsidence of the enlarged spleen and by the expected change in the blood picture. The rays were applied for eighteen hours and forty minutes in forty-four days, different points being exposed for a total of from 50 to 175 minutes. The interposition of the thin silver plate, however, prevented any injury to the skin. Considerable but transient hyperemia was observed at three points which had been exposed for 125, 125 and 90 minutes. His silver shield is 140 mm. in diameter, enclosed in a celluloid capsule and set in a square frame of lead, 0.6 mm. thick, and about half a yard square, covered with black cloth. He gives an illustration of the silver shield and of the lead-lined protecting cabinet with lead glass window in which the operator sits. He uses a Bauer lamp, as hard as possible, at a distance of 20 cm., protecting all unexposed parts of the patient's body with sheets of lead 0.6 mm. thick. He thinks that these experiences with the silver shield indicate that it is possible that certain metals allow certain rays to pass and arrest others, so that we may learn to apply only those rays to the parts to be treated which are particularly indicated by the affection in question, thus obtaining a specific radiotherapy for the various organs. He is engaged in research along this line, but for the present contents himself with the announcement that the interposed silver plate is certainly an important progress in radiotherapy.

Archivio per le Scienze Mediche, Turin.

XXXI, No. 4, pp. 323-412.

142 Necrotic Inflammation of Bacterial Origin. (Aortite ulcerosa con aneurismi—Enterite necrotica.) F. Vanzetti.
143 Cultural Diagnosis of Paratyphoid Bacilli and the Neutral Red Reaction. (Paratifi.) M. Segale.
144 Elements of Lymphoid Type in the Bone Marrow. (Elementi di tipo linfoide del midollo delle ossa.) U. Parodi.
145 Endotheliomas of the Meninges. (Memoria quinta intorno ai tumori endoteliali.) E. Ravenna.
146 Distribution of Phosphorus in the Organs and Decomposition of Organic Phosphorus Compounds. (Fosfori negli organi.) G. Satta.

Gazzetta degli Ospedali, Milan.

December 1, XXVIII, No. 144, pp. 1507-1522.

147 Protecting Action of the Vagus Against Increase of Internal Temperature. (Azione protettiva del vago.) G. A. Pari.
148 Clinical Study of Action of Sodium Formiate. A. Michelazzi.
149 Jaundice and Collapse Following Use of Maretin. C. Zilie.

December 8, No. 147, pp. 1539-1547.

150 Bacteriologic Research on Pellagra. G. Tizzoni.
151 Presence of Phenol in the Blood in a Fatal Case of Poisoning. (Presenza del fenolo nel sangue nei casi di avvelenamento.) O. Modica.
152 Experiences with Tansini's Technic for Mammary Cancer. G. Camparl.
153 Four Cases of Successful Serum Treatment of Tetanus. A. Gasparini.

December 15, No. 150, pp. 1571-1586.

154 Cysticercus in the Brain and Dementia. A. Ziveri.
155 Psychogenic Nature of Blepharospasm. G. Mirto.
156 *Injection of Atmospheric Air in Tuberculous Peritonitis. E. Napoleone.
157 Technic for Obtaining Access to Middle Meningeal Artery. G. Pisano.

156. **Injections of Air in Treatment of Tuberculous Peritonitis.**—Napoleone taps the ascitic fluid and then injects atmospheric air into the peritoneal cavity in tuberculous peritonitis, and relates very favorable results of this technic. The case reported in detail is that of a woman of 28 presenting symptoms of tuberculous peritonitis for a year, with no apparent benefit from the usual measures. The debility was so extreme that a laparotomy seemed too hazardous and intervention was restricted to tapping, followed by an injection of a small amount of air. A little ascitic fluid collected again, and the injection of air was repeated a month later, after which recovery rapidly progressed. The patient is at present in the best of health. Kawahara's experience has demonstrated the harmlessness of injection of air. He ascribes almost a specific action to the air and its saphrophytes in respect to tuberculous lesions. Napoleone adds that the air holds the intestines apart and thus prevents formation of adhesions. He proposes the injection of air only for cases in which a laparotomy is contraindicated for any cause, assuming that the benefit from the laparotomy is due in large measure to the air introduced.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MEDICAL DIAGNOSIS. By Charles Lyman Greene, M.D., Professor of Theory and Practice of Medicine in the University of Minnesota. Second Edition revised. Pp. 691, with 248 illustrations. Flexible leather. Price $3.50. Philadelphia: P. Blakiston's Son & Co., 1907.

LIGHT AND X-RAY TREATMENT OF SKIN DISEASES. By Malcolm Morris, F.R.C.S., Edin., Surgeon to the Skin Department of the Seamen's Hospital and S. Ernest Dore, M.D., Cantab., Assistant in the Skin Department of Middlesex Hospital. Cloth. Pp. 172, with 12 illustrations. Price $1.50. Chicago: W. T. Keener & Co., 1907.

APHORISMS AND REFLECTIONS. From the Works of T. H. Huxley. Selected by Henrietta A. Huxley. Cloth. Pp. 199. Price $1.00. New York: Macmillan Co., 1907.

TRANSACTIONS of the Thirty-third Annual Meeting of the Oregon State Medical Association. Paper. Pp. 158. Portland: Irwin-Hodson Co., 1907.

PROCEEDINGS of the American Society for Psychical Research. Vol. I. Part III. Paper. Pp. 722. Price $2.00. Boston: Small, Maynard & Co., 1907.

STUDIES FROM THE BENDER HYGIENIC LABORATORY, ALBANY, N. Y. Vol. IV. Paper. Pp. 160. Albany: Brandow Printing Co., 1907.

EIGHTY-SEVENTH REPORT of the New York Eye and Ear Infirmary. Paper. Pp. 50.